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EXOTIC FLORA.

EXOTIC FLORA,

CONTAINING

FIGURES AND DESCRIPTIONS

OF

NEW, RARE, OR OTHERWISE INTERESTING

Exotic Plants,

ESPECIALLY OF SUCH AS ARE DESERVING OF BEING CULTIVATED IN OUR GARDENS;

TOGETHER WITH

REMARKS UPON THEIR GENERIC AND SPECIFIC CHARACTERS, NATURAL ORDERS, HISTORY, CULTURE, TIME OF FLOWERING, *&c.*

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ALPHABETICALLY ARRANGED,

TO THE

SPECIES AND SYNONYMES CONTAINED IN THE SECOND VOLUME

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EXOTIC FLORA.

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Oenothera speciosa

ŒNOTHERA SPECIOSA.

Large white-flowered Evening-Primrose.

OCTANDRIA MONOGYNIA.—NAT. ORD. *ONAGRARIÆ, Juss.*

GEN. CHAR.—*Calyx* quadrifidus, tubulosus. *Petala* quatuor. *Capsula* quadrilocularis, quadrivalvis, cylindrica, infera. *Semina* nuda.—*W.*

Œnothera *speciosa;* puberula, foliis oblongo-lanceolatis dentatis subpinnatifidis, racemo nudo primo nutante, capsulis obovatis angulatis, caule suffruticoso.—*Nutt.*

Œ. speciosa, NUTT. *in Journ. of the Acad. of Sciences of Philadelphia*, vol. ii. p. 119.

Stem, in our plant, about four feet in height, slender, weak, flexuose, suffruticose, rough with minute pubescence, cylindrical, green, slightly branched. *Leaves* distant, scattered, broadly lanceolate, attenuated at the base, denticulato-serrate at the margin, acute, nerved, glabrous above, minutely pubescent beneath.

Flowers in terminal racemes, at first drooping. *Peduncle* very short, with a small, narrow, foliaceous bractea at the base. *Calyx* superior, tubular at the base; the *limb* of four linear segments, but adhering for the greater part of their length, opening only on one side entirely, to admit the expansion of the corolla, and standing out nearly horizontally. *Petals* four, placed upon the summit of the tube of the calyx, very large, obversely cordate, spreading, waved, pure white, yellow at the base, and sending upwards several yellowish-green, slightly diverging nerves, becoming rose-colored previous to decay. *Stamens* eight, inserted just within the tube of the *calyx*. *Filaments* nearly equal in length to the corolla, erect, alternately shorter. *Stamens* long, linear, placed transversely, with their centre on the top of the filament. *Pollen* yellow, cohering together, and hanging attached to the stamens stigmas and style, in great abundance, after the bursting of the cells. *Germen* inferior, subclavate, but slightly attenuated at both ends and quadrangular, pubescent. *Style* filiform, longer than the stamens. *Stigmas* four, spreading cross-wise, linear, afterwards pendent.

No author appears to have known this fine species of *Œnothera*, till Mr NUTTALL discovered it on the plains of the Red River, in the Arkansa territory of North America, flowering in the months of June and July, and afterwards described it in the work above quoted.

It was in 1821 raised from seeds brought from the Arkansa, at the Garden of the University of Philadelphia, by Mr DICK, and that gentleman was kind enough to communicate some of the seeds which ripened under his care, to the Botanic Garden of Glasgow. Our plants blossomed in the greenhouse in the beginning of July, making a very showy appearance, and emitting a delightful fragrance, which, like some of the other species of this genus, is most powerful in the evening. The *Œ. speciosa* promises to be a great acquisition to our collections, especially if, as is very probable, it should be found capable of bearing the open air in this climate.

The flowers continue many days in perfection, but are most fully expanded at the approach of night.

Fig. 1. A flower deprived of the petals, *very slightly magnified.*

Habenaria tridentata

HABENARIA TRIDENTATA.

Tridentate Habenaria.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Gen. Char.—*Cor* ringens. *Labellum* basi ecalcaratum. *Glandulæ pollinis* nudæ distinctæ (loculis pedicellorum adnatis vel solutis distinctis).—*Br.*

Habenaria *tridentata;* petalis conniventibus, labello subæquali late ovato obtuse tridentato, cornu filiformi curvato germine longiore.

Orchis tridentata, Muhl. *MSS.*—Willd. *Sp. Pl.* v. iv. p. 41.—Pursh, *Fl. of N. Am.* p. 587.

Root consisting of a few thick, whitish, subfasciculated, fleshy fibres. *Stem* a foot or more in height, erect, straight, furrowed, furnished near the middle with two or three moderately sized, oblongo-lanceolate, striated leaves; below with about as many submembranaceous or foliaceous scales, whilst in the upper part are two or three small bracteiform leaves. *Spike* oblong, of rather few, somewhat distantly placed, small, greenish-white *flowers,* accompanied by lanceolate bracteæ, which are about equal in length with the germens. The five *petals* are connivent; of these the *two innermost* are the smallest; the *three outer ones* broadly ovate, concave; the *lateral ones* embracing with their margin the lower part of the lip. *Lip* standing out horizontally, about equal in length with the petals, broadly ovate or somewhat quadrate, cut at the extremity into three very short and obtuse teeth, and protruded at the base into a long filiform white spur, curved upwards, and subclavate at the extremity; this is rather longer than the germen. *Germen* oblong, somewhat gibbous at the base, angular, slightly twisted. *Column* very short. *Stigma* extremely small, convex. *Anther* large, terminal, 2-celled: the cells distant at the base, and containing each a clavate yellowish pollen-mass, whose glands of the footstalk are naked, and set apart or distant from each other.

Another North American plant, for the introduction of which, from Canada, we are indebted to the zeal and perseverance of Mr Goldie. In general habit, its greatest affinity is

with our *Habenaria albida;* but, on examining the flowers minutely, abundant distinctive characters will be found.

My friend Mr Bootт has detected the same species, and has communicated beautifully dried specimens to me from near Boston, in new England. The individual from which the accompanying figure was taken, flowered in the garden at Monkwood Grove, from roots imported by Mr Goldie.

Fig. 1. Single flower. Fig. 2. Flower, deprived of the 5 petals. Fig. 3. Column of fructification and lip.—*All more or less magnified.*

Galium aliatum

TALINUM CILIATUM.

Ciliated Talinum.

POLYANDRIA (DODECANDRIA) MONOGYNIA, *Willd.*—NAT. ORD. *PORTULACEÆ.*

GEN. CHAR.—*Calyx* di-pentaphyllus. *Capsula* supera, tri- sex-valvis, unilocularis, polysperma.—SM. *in Rees.*

Talinum *ciliatum*; foliis lineari-subspathulatis ciliatis, floribus corymboso-racemosis bracteatis, caule angulato.

T. ciliatum, " RUIZ et PAV. *Fl. Chil. et Per.*"—PERS. *Syn. Pl.* v. ii. p. 7.

An annual plant, as it appears, of about a foot and a half in height. *Stems* erect or decumbent, weak, angular, red and branched below, above greenish, scarcely and only here and there pilose. *Leaves* scattered, from one and a half to three inches long, linear, frequently subspathulate, acute, more or less patent, the extremities frequently recurved, the upper surface channelled, the lower subcarinated, especially near the base, where it is reddish, the margin distinctly ciliated.

Flowers at first in terminal leafy corymbs, at length in racemes, of a bright and deep purple, pedicellated. *Pedicels* about half an inch long, thickened upwards, subpilose at their base, which is decurrent, having a large leaf-like bractea, and near that generally another much smaller and appressed one. *Calyx* of two triangular, thickish, green, subpilose, waved leaflets, with their margins more or less incurved, which are erect in the bud, somewhat spread in flower, and which at length persist, enlarge and enclose the fruit. *Corolla* of five broadly ovate and slightly notched petals. *Stamens* from ten to fifteen in number. *Filaments* subulate, purplish, hairy. *Anthers* adverse, ovate, of two cells, pale purplish, scarcely longer than the stigma, and shorter than the petals. *Pollen* yellow. *Pistil* almost entirely surrounded and concealed by the stamens. *Germen* roundish, green, glabrous. *Style* shortish, thick. *Stigma* capitate, with three or four deep purple, velvety, obtuse, spreading rays. *Capsule* ovate, enclosed in the calyx, opening with three or four rather obtuse valves. *Seeds* numerous, ovate, compressed, dotted, black, shining, collected into the centre, and fixed to the base by as many distinct filaments incrassated upwards, as there are seeds. *Embryo* cylindrical, curved, and enclosing the albumen in its centre.

Here, as in most of the genera arranged by botanists in the Class *Dodecandria*, we find the number of stamens liable to great variation; and with Sir JAMES E. SMITH, I prefer referring this genus to the Class *Polyandria*. In the characters of *Talinum*, too, at least as given by PERSOON in his Synopsis, and by SMITH in REES' *Cyclopædia*, the seeds are said to be fixed to a globular central receptacle, in contradistinction to those filiform ones which separately support the seeds in *Portulacca*. The present species, and the *T. patens* figured in LAMARCK's Illustrations, have their seeds each evidently attached to a filiform stalk, by means of which they are fixed to the base of the capsule.

The species here represented, although scarcely worthy of cultivation for its beauty (its flowers, which expand in the morning when the rays of the sun strike upon them, being peculiarly evanescent), yet deserves notice on account of its rarity; no author, as far as I can discover, having noticed it, except it be perhaps RUIZ and PAVON in their *Flora Peruviana et Chilensis:* and the definition there given is so short, "Talinum ciliatum foliis lineari-oblongis ciliatis, floribus axillaribus solitariis," that I cannot feel by any means assured that I have done correctly in adopting their specific name. In the main character of the ciliated foliage it unquestionably agrees; and with regard to the "flores solitarii," if the large foliaceous processes be considered as leaves, rather than as bracteas (and their insertion is not where the pedicel immediately joins on to the stalk), then these authors are right in that particular also. At the same time, I may observe, that the footstalk is *united* with the stalk for the lower half of its length, and at the base of this point of union the leaf or bractea is inserted.

Fig. 1. Petal. Fig. 2. Flower, with the petals removed. Fig. 3. Single stamen. Fig. 4. Pollen. Fig. 5. Pistil. Fig. 6. Capsule, with one of its calyx-valves spread open. Fig. 7. Capsule bursting open. Fig. 8. Cluster of seeds on their stalks. Fig. 9. Single seed, with its stalk. Fig. 10. Seed cut open, to shew the Embryo and Albumen.—*All more or less magnified.*

Loasa nitida

J. Swan Sculpt. Glasgow

LOASA NITIDA.

Shining-leaved Loasa.

POLYADELPHIA POLYANDRIA *(rather than Polyandria Monogynia).*—NAT. ORD. *LOASEÆ (Genus Onagrariis affinis, Juss. Gen.)*

GEN. CHAR.—*Cal.* pentaphyllus. *Cor.* pentapetala. *Nectarium* pentaphyllum. *Capsula* semi-infera, monolocularis, semivalvis, polysperma.—*Pers.*

Loasa *nitida*; hispida, foliis oppositis cordato-lobatis angulato-dentatis petiolatis superioribus sessilibus, pedunculis axillaribus.

L. nitida, LAM. *Encycl.* vol. iii. p. 581.—WILLD. *Sp. Pl.* vol. ii. p. 1177.—JUSS. *in Ann. du Mus.* v. 5. p. 25.—PERS. *Syn. Pl.* v. ii. p. 71.—*Bot. Mag.* t. 2372.
L. tricolor, *Bot. Reg.* t. 667.?

Apparently an annual plant, with a straggling, weak, succulent, and fragile *stem*, of two or three feet high, branched in a dichotomous manner, and, as well as the whole plant, clothed with longish hairs, which appear, when seen under a microscope, to be jointed, and to have short reflexed bristles, and still larger hairs or stings, seated upon a swollen sac or bag of poison, similar to what is seen in the stings of the *Common Nettle*. *Leaves* all opposite, somewhat five or seven lobed, with the lobe angular and toothed, the lower ones much the largest, placed on long footstalks; the upper ones sessile, smaller, and less distinctly lobed.

Flowers axillary, generally solitary, pedunculated. *Peduncles* at first erect, after flowering bent down, swelling upwards into the inferior pyriform *germen*. *Calyx* cut into five, rarely four, deep segments, superior, lanceolate, acute, green, hispid, at first patent, afterwards reflexed. *Corolla* of five, bright yellow, subunguiculate, concavo-ventricose petals, reddish at the base, waved at the margin, at first spreading, then bent back. *Crown* of five, broadly ovate scales, red below, white upwards, where there are two slight depressions, and bidentate, somewhat pubescent at the base, where there are three (one on each side and one in the middle) subtriangular, toothed, red, fleshy appendages, each at its upper margin furnished with a yellowish-brown, clavate *filament*. On the posterior side, the margins of these scales are seen to be curved in, and to contain two filamentose bodies, curved and slightly pubescent at the base, about equal in length to the scale, and bearing on one side a purplish filament, which exceeds the scale in height. *Stamens* about ten in each bundle; at first bent down at an angle, and concealed within the concave petals of the corolla, at length gradually springing upwards, and lying against the *style* and *stigma*, between the scales of the nectary. *Filaments* purplish. *Anthers* yellow, ovate. *Pollen* oblong when dry, spherical when moist, and always marked with a central line. *Germen* inferior, or nearly so: rising above the calyx, in an hemispherical hairy head. *Capsule*, with the persistent calyx opening into three valves in the superior extremity. *Receptacles* corresponding with the sutures, rather large, fleshy. *Seeds* several on each receptacle, longish, oblong, attached on one side, wrinkled, brown. *Albumen* white, between waxy and horny, and enclosing in its centre a cylindrical straight embryo, slightly thickened upwards.

Raised in the stove of our Botanic Garden, from seeds sent by Mr CRUIKSHANKS from Chili; and being no doubt the same species as the individual above quoted in the *Botanical Magazine*. In general appearance, too, this plant sufficiently

corresponds with the *Loasa nitida* of LAMARCK, figured by JUSSIEU in the *Annales du Muséum*; but the representation there given of the scale of the nectary, with its appendage, is extremely incorrect; and had it not been that the author says of the scale that it is like that of *L. triloba* (which is very similar indeed to the present), I should hardly have ventured upon making it the same. *L. triloba* and *L. nitida*, indeed, supposing the scale to be alike in both, approach so nearly to each other, that the only difference between them seems to be, that the upper leaves of the former are petiolate, the latter sessile.

The *L. tricolor* of the *Bot. Reg.* I have quoted as a synonym doubtfully; but I cannot help expressing my opinion, that it is probably the same as our present plant. It was received, as it would appear, about the same time, from the same country as produced Dr SIMS' and the accompanying individual, and seems to differ only in the (usually) more deeply divided leaf, which has narrower segments, and in having three stigmas instead of one.

Of this singular, and I may add beautiful genus, (for the flowers are handsome both in hue and form), twelve species have been described, and most of them figured by JUSSIEU, in the 5th volume of the *Ann. du Mus. d'Hist. Nat.* Nearly all of these are natives of Peru and Chili; and we learn from the *Bot. Mag.* that Mr LAMBERT possesses engravings of fifteen species, chiefly new ones, which were prepared for the ensuing volume of the *Fl. Peruv.*: one alone, *L. argemonoides*, being found near Santa Fé de Bogotà, and generally growing among the Cinchonas and Tree Ferns of these tropical regions.

In the memoir by M. JUSSIEU above quoted, that learned botanist has separated this genus from the ONAGRARIÆ (where, among the *Genera Onagrariis affina*, it was placed in the *Genera Plantarum*), and along with *Mentzelia*, has established for it a new Order, LOASEÆ. Most of the individuals are hispid and stinging, the stings usually resembling those of our nettles, with their poison-bag much swollen and reticulated *; the sting itself being a clear transparent tube, through which the fluid may be distinctly seen to pass.

Fig. 1. Flower. Fig. 2. The same, deprived of most of the petals and stamens, and of the nectary. Fig. 3. Back view of a scale of the nectary. Fig. 4. Front view of the same. Fig. 5. One of the filaments from within the scale. Fig. 6. Stamen. Fig. 7. Pollen, when in a dry state. Fig. 8. Ditto, when moist. Fig. 9. Sting. Fig. 10. Hair, with its joints and bristles. Fig. 11. Germen cut through transversely. Fig. 12. Seed. Fig. 13. Section of the seed, shewing the Albumen and Embryo. Fig. 14. Embryo removed from the seed.—*All more or less magnified.*

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* It is a curious circumstance, that, in the month of July 1823, an unusually cold season, some individuals of the *L. nitida*, which were planted in the open border of our garden, had the poison-bags considerably larger, whiter, and filled with a much greater quantity of fluid, than those that were kept under the protection of a greenhouse. The whole plant, too, became considerably stronger.

Lebertin

LESSERTIA ANNUA.

Annual Lessertia.

DIADELPHIA DECANDRIA.—NAT. ORD. *LEGUMINOSÆ.*

GEN. CHAR.—*Calyx* semiquinquefidus. *Vexillum* explanatum. *Carina* obtusa. *Stigma* capitatum. *Stylus* antice barba transversa apicis; postice imberbis. *Legumen* scariosum, evalve (compressum vel inflatum).—BR. *in Hort. Kew.*

Lessertia *annua*; calycibus bibracteatis nigro-pilosis, foliolis linearibus supra glabris.—*Br.*

L. annua, DE CAND. *Astrag.* p. 38.—BR. *in Hort. Kew.* ed. 2. v. iv. p. 328.
Colutea herbacea, WILLD. *Sp. Pl.* v. iii. p. 1141.

Stems about one foot high, suberect, slender, weak, striated, subpubescent, branched, annual, (*Brown*), with us apparently perennial or biennial.

Leaves few in number. *Petioles* from two to four inches long, slender, furrowed on the upper side, and furnished with from four to nine distantly placed, linear obtuse leaflets, of about three quarters of an inch in length, sessile, glabrous above, of a pleasant rather deep green, beneath under the microscope slightly pubescent. *Stipules* two, very small, patent, subulate.

Peduncle five or six inches in length, slender, filiform, pubescent, with about five or six small, elegant, distant, pedicellated flowers. *Calyx* of one piece, obtuse at the base, and there furnished with two opposite, very minute bracteas, and covered with short, dark colored, almost black pubescence; cut into five nearly equal teeth, about one-third as long as the calyx. *Vexillum* rotundato-obcordate, with a short claw, recurved, deeper rose-colored, with darker oblique lines meeting in the centre. *Alæ* and *carina* deep purple, nearly equal in length, the former oblong, curved, and slightly twisted towards the extremity, appressed to the carina, which is compressed, boat-shaped, obtuse; both are shortly unguiculate.

Stamens concealed within the carina, one free, nine united. *Anther* yellow.

Pistil: Germen linear-lanceolate, compressed, horizontal. *Style* erect, glabrous, filiform, terminated just below the small capitate *stigma*, with a circular thick ray of delicate white hairs, which are longest on the inferior side. *Legumes* thin, membranaceous, faintly reticulated, towards the margins flattened, the centre slightly inflated, valveless (*Br.*), with

the *seeds*, ten or twelve in number, subspherical, attached in two rows by a shor talk to the upper margin, terminated at the extremity by the persistent style.

The seeds of this delicate and graceful little plant were received in our Botanic Garden from the Cape of Good Hope; and the plants produced flower with us in the month of June. These were of short duration, and quickly succeeded by the comparatively large and slightly inflated scariose seed-vessels.

The genus was separated from *Colutea* by De Candolle, and dedicated to M. De Lessert of Paris, a great patron of botanists, and eminent for his extensive herbarium. Mr Brown has followed the illustrious Genevese, and in the second edition of the *Hortus Kewensis*, has drawn up a character differing from that of *Colutea*, in the want of a bicallose vexillum, and of a " stigma laterale sub apice uncinato styli, postice longitudinaliter barbati."

Of the genus *Lessertia*, all the known species are natives of the Cape of Good Hope, as those of *Colutea* appear to be of the south of Europe. *Swainsonia*, a genus instituted by Mr Salisbury, seems very closely allied to this, and the species (*S. galegifolia*) figured in the *Botanical Magazine*, seems to possess altogether the habit of our present plant.

Fig. 1. Single flower. Fig. 2. Vexillum. Fig. 3. One of the alæ. Fig. 4. The carina. Fig. 5. Stamens and pistil. Fig. 6. Style and stigma. Fig. 7. The Legume (*natural size*). Fig. 8. The legume partly laid open, to shew the situation of the seeds.—*All but* Fig. 7. *more or less magnified.*

Monotropa uniflora

MONOTROPA UNIFLORA.

Drooping single-flowered Bird's Nest.

DECANDRIA MONOGYNIA.—Nat. Ord. *MONOTROPEÆ, Nutt. Hook. Lindl.*

Gen. Char.—*Perianthium* simplex, tetraphyllum, foliolis basi cucullatis. *Antheræ* uniloculares, bilabiatæ. *Capsula* supera, 4–5-locularis, 4–5-valvis. *Semina* numerosa, arillata.

Monotropa *uniflora* ; caule unifloro, squamis approximatis, flore cernuo decandro.

Monotropa uniflora, Willd. *Sp. Pl.* v. ii. p. 573.—Mich. *Fl. Bor. Am.* v. i. p. 266.—Pursh, *N. Am. Fl.* v. i. p. 303.—Nutt. *Gen.* v. i. p. 273.—Elliott, *Bot. of S. Carol. & Georg.* v. i. p. 277.—Pluk. *Alm.* t. 209. f. 2.

Root, according to Mr Elliott, parasitic, and attached to the roots of trees ; in our garden growing simply in earth mixed with leaves, fibrous, fibres much clustered, intricately branched and anastomosing, brown. *Stems* many from the same root, more or less succulent, about six inches high, erect, rounded, simple, thick, white and fleshy. In the place of leaves, there are ovate, appressed, slightly concave, white *scales*, the lower ones at the extremity often tinged with brown.

Flowers solitary, terminal, entirely white, fleshy, drooping, surrounded on all sides by several imbricated scales. *Perianth* single, of 5 obovate or somewhat spathulate, erect leaflets, slightly erose at the extremity ; at the base narrow, and somewhat saccate or cucullate. *Stamens* quite white, ten in number, alternately shorter, the longer ones rather shorter than the perianth, erect and placed against the pistil. *Filaments* pubescent. *Anthers* large, 1-celled, opening near the top by two transverse and oblique clefts. *Pistil : Germen* broadly ovate, with ten longitudinal furrows. *Style* rather short and thick. *Stigma* peltate, depressed in the centre, and marked with 5 rays.

This remarkable plant was raised, probably for the first time in Britain, in the month of June 1823, under a common frame in our Botanic Garden of Glasgow, in a box of earth which

was sent, containing other rarities, from the neighbourhood of Montreal, by Mr MACLEAN. Its first appearance above ground was more like that of some thick white and fleshy *Clavaria*, than of any phænogamous plant; and the whole substance resembled of white wax.

It appears to inhabit a great extent of country in North America, having been found in Canada, in Carolina and Georgia, and I believe in many intermediate districts.

Mr NUTTALL has separated from the genus *Monotropa* the *M. Hypopithys*, under the name of *Hypopithys europæa*, principally in consequence of a slight difference in the filaments and anthers; but the general habit of the plant, and every essential particular, are so similar in the two individuals, that I can by no means assent to this change. Like our European species, the present plant turns black in drying, but it is destitute of that agreeable primrose-like fragrance which is so remarkable both in the living and recently dried state of *M. Hypopithys*.

Fig. 1. Flower deprived of its scales, *nat. size.* Fig. 2. Leaflet of the perianth. Fig. 3. Back view of a stamen. Fig. 4. Front view of an anther. Fig. 5. Transverse section of an anther. Fig. 6. Pollen. Fig. 7. Stamens and pistil. Fig. 8. Pistil. Fig. 9. Section of the Germen.—*All but* Fig. 1. *more or less magnified.*

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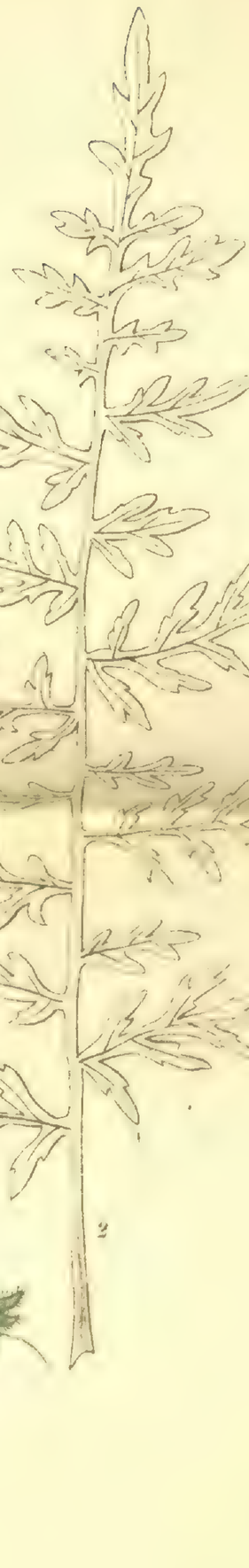

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Tetrazonthus ferrugineus

SCHIZANTHUS PORRIGENS.

Spreading Schizanthus.

DIDYNAMIA ANGIOSPERMIA, (DIANDRIA, *Vahl.*)—NAT. ORD. *PERSONATÆ, Brown, Juss.*

GEN. CHAR.—*Calyx* quinquepartitus. *Corolla* bilabiata, resupinata; labio superiore quinquepartito, inferiore tripartito. *Stamina* quatuor, duo sterilia. *Capsula* bivalvis, bilocularis.—*Vahl.*

Schizanthus *porrigens*; pedicellis fructus patentibus distichis rectiusculis (corollæ labio inferiore pallide purpureo).—*Graham, MSS.*

Plant reaching to the height of three feet, and spreading its numerous patent branches to an almost equal diameter; the stem and branches covered with glandular hairs, from the extremity of which a strong acid is distilled. *Leaves* largest near to the base of the plant, gradually becoming smaller upwards, some of them four or five inches long, bi-tripinnate, slightly hairy, obscurely veined, the segments subpinnatifid, with the lobes acute.

Flowers very numerous, rather distantly placed, and arranged in a distichous manner upon long zig-zag, slender, spreading, glanduloso-hirsute, terminal and lateral racemes. *Pedicels* about an inch long, slender, patent, nearly straight, having at the base two very small oblong bracteas.

Calyx quinquepartite, the segments linear, erecto-patent, glandular, green. *Corolla* very nearly of the same shape as that of *S. pinnatus*, but with the middle segment of the upper lip not so deeply notched, and the margins everywhere less toothed or erose. Of the upper lip the purple hue is much paler; the yellow tint occupies a much larger space in the middle segment, and there exist, almost constantly, two deep purple spots, and two others, one on each side of the lateral segment; the lower lip is invariably of a pale purple. Dr GRAHAM has observed, that the two perfect anthers at first lie concealed in the concave part of the inner segment of the lower lip; but that if they are touched, when ripe, they start forward towards the style and stigma, and then burst.

In fruit the pedicels still retain their almost straight direction, and they bear capsules very similar to those of *S. pinnatus.* These appear, however, to be more obtuse at the top, and to have each valve, when burst, notched at the extremity; but this, Dr GRAHAM observes, is not a constant character. *Seeds* smaller, rounder, and paler coloured than in *S. pinnatus.*

Under the description of *Schizanthus pinnatus*, given at t. 73. of this work, I have mentioned the liability to variation

of that plant in the size and colour of its flowers, and in the shape of its leaves. When the different individuals to which I alluded, arrived, however, at perfection, Dr GRAHAM felt satisfied that there were two separate species among them; one of which, the *S. pinnatus* *, may be distinguished by its generally smaller size, more upright mode of growth, by its having the lower lip of the corolla always of an intense purple, and the upper one spotless; the bracteas being large and foliaceous, and, above all, the footstalks of the fruit quite secund, deflexed from the base, and at the superior extremity singularly curved upwards. The other species is the one here figured, from a beautiful drawing by Mr GREVILLE, and for the description of which I am chiefly indebted to the information afforded by Dr GRAHAM.

In order to demonstrate more clearly the difference of the two plants, Mr GREVILLE has, at Fig. 9. given a representation of a raceme of *S. pinnatus*.

It will be agreeable to all lovers of plants to know, that this individual may be considered a hardy annual; the finest specimens of it in the Edinburgh Botanic Garden being those which have grown in the open air, and which are now, in the latter end of November, covered with flowers and seedvessels.

Whether this, or the *Schizanthus* figured at t. 73. be the one intended for *S. pinnatus* by RUIZ and PAVON, I have no means of determining. I suspect that it is the present species; for Dr SIMS, in his description of *S. pinnatus*, tells us, that on comparing it with the delineation in the *Flora Peruviana*, he was inclined to consider it as distinct.

I quite agree with Dr GRAHAM in believing, that the larger figure in the *Botanical Register*, tab. 723. is drawn from *S. porrigens*, although the specimen is in much too young a state to shew the more important characters of the species.

Fig. 1. Portion of a plant, with flowers and advanced fruit. Fig. 2. Lower leaf, *natural size*. Fig. 3. Flower. Fig. 4. Pedicel and capsule. Fig. 5. Capsule opened, to shew the receptacle and seeds. Fig. 6. Capsule which has discharged its seeds. Fig. 7. Seeds, *natural size*. Fig. 8. Two seeds, highly magnified.—*All but* Figs. 1, 2. and 7. *more or less magnified*. Fig. 9. Raceme of *S. pinnatus*, *natural size*.

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* *S. pinnatus* may be now thus characterised, "pedicellis fructus secundis, basi deflexis, sursum insigniter curvatis, (corollæ labio inferiore intense purpureo)."—*Graham. MSS.*

HABENARIA BLEPHARIGLOTTIS.

White Fringe-lipped Habenaria.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Div. *Anthera adnata terminalis persistens.* Pollinis massæ *e lobulis angulatis elastice cohærentibus; basi affixæ.—Br.*

Gen. Char.—*Corolla* ringens. *Labellum* basi subtus calcaratum. *Glandulæ pollinis* nudæ, distinctæ (loculis pedicellorum adnatis vel solutis distinctis).—*Br. in Hort. Kew.*

Habenaria *blephariglottis;* radicibus fasciculatis, labello lanceolato ciliato longitudine petali supremi, cornu longissimo germine paululum breviore.

Orchis blephariglottis, Willd. *Sp. Pl.* v. iv. p. 9.—Pursh, *Fl. Amer. Bor.* v. ii. p. 585.—Nutt. *Gen. N. Am. Pl.* v. ii. p. 188.

Root (according to the drawing of Mr Syme) decidedly composed of thick, fleshy, long and flexuose fasciculated fibres, still apparently formed into two clusters, from the summit of one of which is a gemma or bud indicative of the future year's plant, from the other rises the present year's stem, about ten inches in length, erect, terete, striated, with two or three sheathing scales at the base, and upwards, with about three lanceolate, carinated, more less acuminated, striated, yellowish-green *leaves,* paler on the underside, merging upwards into bracteas, sheathing at their base. *Spike* of flowers pure white, forming an oblong, obtuse, rather lax head. *Bracteas* lanceolate, smooth, the lowermost ones about as long as the germen, the rest gradually shorter upwards. *Corolla* entirely of a pure white. The three uppermost petals erect, lanceolate, obtuse, the exterior one being thrice as large as the two inner ones; the two lateral ones ovate, singularly bent back and downward, so that in looking at the front of the flower, their backs come into view. *Lip* lanceolate, obtuse, standing out horizontally, about as large or rather larger than the uppermost petal, convex above, its margins elegantly fringed with white hair-like processes, terminated below in a long, slender, twisted, deflexed *spur,* which is nearly equal in length to the germen. *Germen* extremely long, slender, twisted, much attenuated upwards. *Column of fructification* very short. *Stigma* small, concave. *Anther* large, terminal, composed of two distinct cells, approaching each other in the upper part, much diverging below, but connected by a thick, fleshy, transverse substance, opening horizontally. The *pollen-masses* I have not seen, as the anthers had opened, and discharged their pollen in all the flowers which I had the opportunity of examining.

This charming Orchideous plant, remarkable for the pure white of its blossoms, and their elegantly ciliated labellum, does not appear to have been known in our collections, till it was introduced into the garden of Dalhousie Castle by the Right Honourable the COUNTESS of DALHOUSIE, who sent it from Canada. The able superintendant of that establishment, Mr ARCHIBALD, transmitted a flowering specimen to Dr GRAHAM, who forwarded it to me in the state in which it is represented in the left-hand figure of the accompanying plate. The rest of the stem and roots are copied from a beautiful drawing made by Mr SYME of Edinburgh, author of the ingenious "Nomenclature of Colours as adapted to the study of Natural History." It flowered in the month of May, and, from the knowledge and skill at which we are arrived in the cultivation of orchideous plants, it may be hoped that this delicate species of *Habenaria* will soon become a general inhabitant of our collections *.

The nearest ally of this plant is undoubtedly the *Habenaria (Orchis) ciliaris* of WILLDENOW, figured at the 42d plate of ANDREWS' *Botanical Repository*: in the latter, however, the flowers are of a deep orange colour, their lower lip far more thickly fringed, and the two smallest of the upper petals are likewise fringed, whereas in the present individual these are quite naked.

WILLDENOW gives this plant as a native of Pennsylvania; PURSH says it is found from Jersey to Carolina, not being aware, it would seem, that it inhabits also the British settlements of North America. The latter author arranges this species among those with two entire tuberous roots, which he was probably led erroneously to do, from the circumstance of his considering CLAYTON's plant "O. testiculata, floribus niveis," &c. as the same. NUTTALL, more correctly, ranks it with those individuals having palmated roots; and the palmated root may be easily conceived to run into the fasciculated one.

The lower and upper petals take a decidedly opposite direction, the three former pointing upwards, the two latter downwards.

Fig. 1. Side view of a flower. Fig. 2. Front view of a corolla,—*magnified.*

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* Living plants, however, were in 1822 brought by Mr GOLDIE from swampy ground in the neighbourhood of Quebec (where it appears to have been found by WILLIAM SHEPHERD, Esq. of that city); but they did not succeed in the garden at Monkwood, near Ayr.

F. Sinan. Augsb. fec.

Potentilla nepalensis

POTENTILLA NEPALENSIS.

Red-flowered Nepal Potentilla.

ICOSANDRIA POLYGYNIA.—Nat. Ord. *ROSACEÆ.*

Gen. Char.—*Calyx* decemfidus, segmentis alternis minoribus. *Petala* quinque. *Pericarpia* receptaculo sicco affixa.

Potentilla *nepalensis;* caule erecto multifloro, foliis quinatis caulinis ternis, foliolis obovato-lanceolatis acute serratis sericeo-pilosis, stipulis ovatis, petalis (rubicundis) obcordatis calyce longioribus.

Stem a foot or a foot and half high, erect, rounded, red, hairy, with the hairs long and patent, branched at the extremity. *Leaves*, the lowermost or radical ones, long, red, hairy, petiolate, quinate, with their leaflets obovato-lanceolate, sharply and regularly serrated almost to their base, purplish, veined, silky with appressed hairs; the cauline leaves ternate, nearly sessile, much smaller, more lanceolate and acute than the others. *Stipules* upon the stem, large, green, ovate, scarcely acute, entire, almost glabrous.

Flowers terminal, upon subpaniculated branches; pedicels one or two inches long, hairy, red. *Calyx*, with the five outer segments small, green, spreading; the five inner ones closing over the bud or fruit, and soon becoming brown. *Petals* exceeding the calyx in length, obcordate, of a beautiful reddish-purple, delicately marked with veins. *Stamens* numerous. *Anthers* purplish-brown. *Pistil: Germen* ovate, greenish, smooth. *Style* from just below the summit of the germen, rather long.

This interesting species of *Potentilla* flowered at the Botanic Garden, Edinburgh, in July 1823. Its seeds had been received by Dr Graham from Nepal, whence they had been transmitted by Dr Wallich.

Even in the leaves and stipules, I am not aware of any species of *Potentilla* with which this one would be liable to be confounded; and the colour of its flowers is unlike that of any individual of the genus which has hitherto been published.

Their nearest resemblance in hue, as far as my knowledge extends, is to that of the blossoms of *Rubus odoratus*. In Mr LAMBERT's herbarium, there exist, however, specimens of a *Potentilla* from the same country as the present, with red inflorescence; but in those individuals, the leaves are ternate, their leaflets small, oval, and covered beneath with a white and silky pubescence.

The drawing of *Potentilla nepalensis* is from the pencil of Mr GREVILLE.

Fig. 1. Petal. Fig. 2. Stamen. Fig. 3. Pistil.—*All slightly magnified.*

Begonia fuchsioides

BEGONIA PICTA.

Party-coloured Begonia.

MONŒCIA POLYANDRIA.—NAT. ORD. *BEGONIACEÆ, Bonpl. De Cand.*

GEN. CHAR.—MASC. *Cal.* 0. *Cor.* polypetala. *Petala* plerumque 4, inæqualia.—FŒM. *Cal.* 0. *Cor.* petalis 4–9, plerumque inæqualibus. *Styli* 3, bifidi. *Caps.* triquetra, alata, 3-locularis, polysperma.

Begonia *picta*; caule perbrevi, foliis cordatis acutis acuminatisque, rugosis hispidis duplicato-serratis, capsulæ alis subæqualibus.—*Sm.*

Begonia picta, SMITH, *Ex. Bot.* t. 101.
Begonia hirta, WALLICH, MSS.

Root perennial, of two small, roundish tubers, together with a few thick, fleshy, simple fibres, mixed with others which are more slender and branched. *Stem* very short, yet slightly branched, thick, succulent, green, more or less tinged with purple, hairy. *Leaves* 3 or 4 inches in length, few in number, cordate, more or less acute, or even (as in Sir JAMES SMITH's plant, and some native specimens in my herbarium), acuminate, green blotched with purple, especially beneath, rugose and hispid, waved, veined, the margins doubly serrated; the *footstalks* long, terete, hairy, with a pair of broadly ovate stipules at the base.

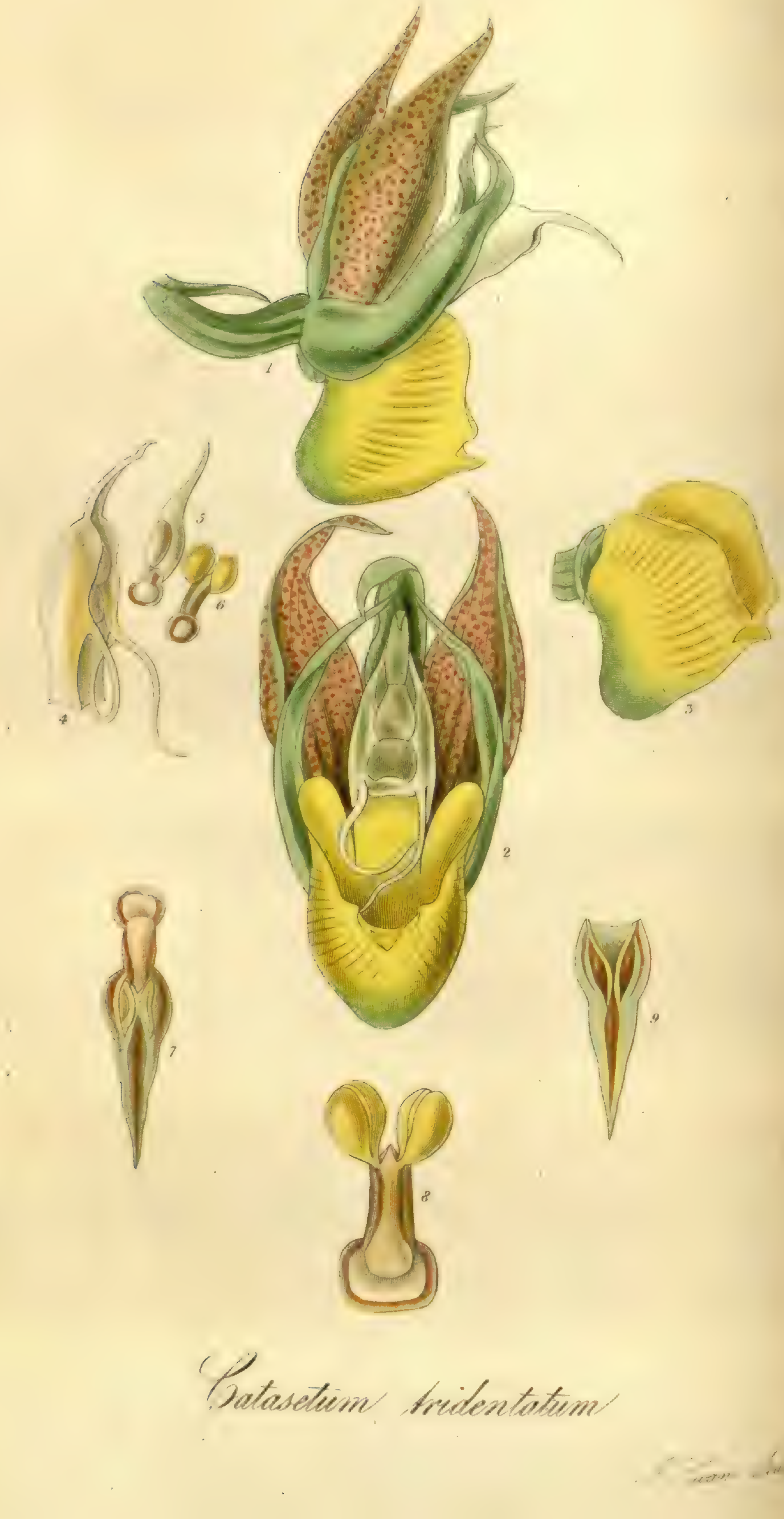
Flower-stalks rather long and thick, from the axils of the leaves, branched upwards into a sort of umbel of about 3 partial stalks, with two rather large, entire or tridentate hairy bracteas. The central *flower* is the *male*, and is formed of 4 large and delicate rose-coloured petals, of which the two outermost are much the largest, rotundato-ovate, crenato-serrate at the margin, longitudinally striated, and externally villose; the two innermost smaller, obovate, glabrous and entire: *Stamens* numerous, and in reality monadelphous, the *filaments* often forked, yellow. The lateral *flowers* are *female*, having four nearly white petals, the two outermost the largest, roundish, slightly crenate, and externally pubescent; the two innermost entire, glabrous: the germen large, inferior, triquetrous, thickly pubescent, with branched, or rather laciniated, white, reticulated processes, the angles protruded into glabrous *alæ* or *wings*, which, though short, are evidently unequal in size. *Styles* 3, yellow, each bifid and twisted something like the shell of a snail.

Communicated from the stove of the Botanic Garden at Liverpool by Messrs SHEPHERD, by whom it was received from Nepal under the name of *B. hirta* of Dr WALLICH. No such name, however, is published; and the able cultivator just mentioned, rightly considers the plant to be the same as the *B. picta*, figured by Sir JAMES SMITH from a Hindu drawing sent by Dr BUCHANAN HAMILTON. That gentleman first found it on rocks above Nepal, and states it to be the *Mungarchaci* of the Parbutties, or Hindu conquerors of Nepal.

It is a lovely plant, elegant both in its flowers and foliage, and well deserving of cultivation in our stoves.

Fig. 1. Section of the Germen of *B. picta*. Fig. 2. One of the styles. Fig. 3. One of the processes of the germen which forms the pubescence.—*All more or less magnified.*

Cyrtochilum tridentatum



Catasetum tridentatum

90, 91

CATASETUM TRIDENTATUM.

Tridentate Catasetum.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Gen. Char.—*Corolla* resupinata; *foliolis* quinque; subæqualia; labello saccato-concavum. *Columna* bicornis; *cornua* retrorsa, filiformia, arcuato-conniventia. *Anthera* operculata, columna interne infra apicem attenuato-subulatum insidens. *Pollinis massæ* duæ, pedicello communi suffultæ.—*Rich. MSS. in Kunth.*

Parasiticum. Folia membranacea, ex apice bulbi erumpentia. *Pedunculi* radicales, uni- pauci- multiflori, bracteati. *Flores* magni.

Catasetum *tridentatum*; petalis duobus interioribus maculatis, labello tridentato.

Whole plant from a foot and a half to two feet in height.

Root composed of many, large, white, thick, smooth fibres. *Bulb* five or six inches in length, oblong, subcompressed, covered at first with the sheathing bases of the leaves, afterwards naked, green, marked with reddish rings where the leaves have been inserted, and longitudinally striated. *Leaves* 6 to 10 inches long, broadly lanceolate, keeled, striated, undulated, bright green, tapering towards the base, but enlarging again very considerably, so as to form the sheathing of the bulb; these sheaths are of a more membranaceous texture than the leaves themselves, paler green, and very closely striated.

Scape arising from the root by the side of the bulb, twelve or fourteen inches in height, cylindrical, green, jointed, and furnished with short membranaceous sheaths, which are slit on one side, terminated at the extremity by a spike of about a dozen very large and beautiful flowers, which are resupinate, and of a highly remarkable structure.

The *five petals* which compose the *corolla* are subconnivent, and form an arch over the colum of fructification; of these the three outer ones are lanceolate, concave, green; the two inner ones are broadly ovate, concave, subacuminate, yellowish-brown, elegantly spotted with purple. *Lip* large, cucullate, ventricose, its margin entire, except in the front, where there are three obtuse teeth, the outside faintly and obliquely striated; its colour is a bright yellow, greenish at the summit; there are sometimes a few very indistinct purple spots within. *Column* united by its base with the back of the lip, an inch long, curved forward, yellow, the back convex, the front concave, its extremity suddenly acuminated, and having a little claw-like process at the very point. From the margin or front, and near the centre, proceed downwards two slender filiform processes, nearly an inch long, which curve towards each other, and are placed within the lip. *Stigma* concave, subquadrate, viscid. *Anther* operculiform (deciduous), and applied to the upper attenuated part of the column, lanceolate, yellow-green, having within at its base two cells. *Cells* containing each a large, spherical, waxy *pollen-mass*, 2-lobed at the back, united by their bases to an oblong, brownish footstalk, whose margins are recurved, and whose base is fixed upon a thickened quadrangular gland. The *germen*, about an inch long, is slightly curved upwards, furrowed, not at all twisted.

Another splendid orchideous plant is here represented, which is derived from the same fertile source as has afforded so many other subjects to this work, namely, the Botanic Garden at Liverpool. It was received, during the present year, from the Baron DE SCHACK, who detected it in woods in the island of Trinidad.

I know of no individual of this family which has flowers so splendid and so curious as the subject of the present plate, except it be an *Anguloa*, which blossomed in my garden in Suffolk some years ago, and which I had received from the Brazils through the favour of Mr SWAINSON. A drawing of that plant is in the possession of my friend Mr LINDLEY, and I have his promise that it shall appear in his excellent *Collectanea Botanica*. At first sight, I was disposed to think that this might be a species of the same genus, but there are several material points of difference; and it was impossible to read the character given by M. RICHARD, of *Catasetum*, in the 1st volume of the *Synopsis Plant. Æquinoct. Orbis novi* of HUMBOLDT and KUNTH, without being satisfied that it must belong to that genus. The species there given is the *Catasetum maculatum* of New Grenada, which is essentially characterised by its ciliated labellum; a second individual, afterwards noticed, is the *C. macrocarpum* of RICHARD's MSS. with blossoms of a deep purple colour, and fruit four or five inches long. No figures exist of either of these.

Mr HENRY SHEPHERD informs me, that "on touching the extremity of the column with a pin, the anther-case flies off with an elastic force *, and takes along with it the pollen-mass; the gland at the base of which is covered with a glutinous substance, by which it adheres to any thing that it comes in contact with." This was precisely the case with the *Anguloa* above mentioned, whose pollen-mass was similarly formed. On touching the top of the anther with a pin, the pollen-mass darted out, and striking forcibly the hand of a bystander, adhered to it by the gland with a considerable degree of firmness.

TAB. 90. Plant, reduced to one-fourth of the natural size.

TAB. 91. Analysis of the flowers; Fig. 1.—6. being all of the *natural size*. Fig. 1. Side view of a flower. Fig. 2. Front view of the same. Fig. 3. Side view of the lip. Fig. 4. Side view of a column, with the Anther, Fig. 5. removed. Fig. 6. Pollen mass. Fig. 7. Inner view of the Anther-case, containing the pollen-mass. Fig. 8. Pollen-mass. Fig. 9. Anther-case, inside view,—*magnified*.

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* This elastic quality perhaps resides in the footstalk of the pollen-mass. whose sides, I believe, on their disengagement from the anther-case, suddenly become rolled back, as is seen at Fig. 8.

Pelexia maculosa

PEPEROMIA MACULOSA.

Spotted-stalked Peperomia.

DIANDRIA MONOGYNIA.—NAT. ORD. *PIPERACEÆ, Humb. et Kunth.*—PIPERITÉES, *De Cand.*—URTICIS AFFINIS, *Juss.*

GEN. CHAR.—*Spadix* cylindraceus, floribus undique tectus. *Stamina* duo. *Stigma* indivisum. *Bacca* monosperma. *Caulis* herbaceus.—*Humb. et Kunth.*

Peperomia *maculosa;* foliis peltatis cordato-ovatis acutis albo-venosis, caule " repente" maculato tenuissime pubescente.

Piper maculosum, LINN. *Sp. Pl.* p. 42.—WILLD. *Sp. Pl.* v. i. p. 166.—VAHL, *Enum. Pl.* v. i. p. 344.—ROEM. et SCHULTZ, v. i. p. 320.—HAW. *Succ. Pl.* p. 4.

Peperomia variegata, " *Fl. Peruv.* v. i. p. 33. t. 52. f. *a.*"

Saururus hederaceus, cauliculis maculosis major, PLUM. *Am.* p. 50. t. 66.

This appears, in its native woods, to be a species of a large size, according to PLUMIER creeping and attaching itself to the rocks and neighbouring trees. The stems are full half an inch thick, swelling at the joints; where the leaves are set on, and at the lowermost joints, throwing out rather large, fibrous, simple roots; cylindrical, green, spotted with purplish-brown, and every where clothed with a fine pubescence, which seems to have been overlooked by every author except Mr HAWORTH. From each of the uppermost joints proceeds a leaf of large size, 6 inches or more in length, and of a thick subcoriaceous texture, very dark green above and shining, with a broad white midrib and white lateral veins curving upwards; the margin is thin pale, coloured, the extremity acute: the underside is of a pale green colour, pubescent, the rib and nerves slightly prominent, of the same colour; the petiole is 6 or 8 inches long, thick, pubescent, spotted, grooved on the upper side, with its extremity inserted into the underside of the leaf within the margin, so as to constitute a *folium peltatum.*

Spike solitary, pedunculated, from the base of the petiole of the terminal leaf, having an ovato-lanceolate bractea, from eight inches to a foot in length, erect (curved in the drawing for want of room), purplish, cylindrical, tapering towards the extremity.

Florets much crowded. *Scales* subquadrate, purplish-green. *Germens* small obovate, with a rather long acumen running out above the stigma. *An-*

thers 2, one on each side the base of the germen, one-celled, purple, sessile. *Seed-vessels* prominent.

A very handsome species of *Peperomia*, presenting a striking appearance, with its large dark-green shining leaves, with white veins, its spotted stalks and petioles, and its long, erect, purplish spikes.

PLUMIER discovered the species in St Domingo, and has given a most excellent figure of it in his *Description des Plantes d'Amerique*. RUIZ and PAVON seem to have found it in the mountains of Pillao in Peru. The plants that I have had the opportunity of examining in flower, were in September 1813, from the Botanic Gardens both of Glasgow and Liverpool, and their possession is due to the liberality of the Messrs LODDIGES.

Fig. 1. Portion of a spike, with its florets. Fig. 2. Single flower.

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CHIOCOCCA RACEMOSA.

Snow-berry Bush.

PENTANDRIA MONOGYNIA.—NAT. ORD. *RUBIACEÆ.*

DIV. VII. *Fructus monocarpus bilocularis dispermus. Stam.* 5. *Fol. opposita; caulis frutescens aut arboreus.—Juss.*

GEN. CHAR.—*Cor.* infundibuliformis, æqualis. *Bacca* bilocularis, 2-sperma, infera.

Chiococca *racemosa*; foliis ovatis acuminatis, racemis subdivisis axillaribus secundis subnutantibus.

Chiococca racemosa, LINN. *Sp. Pl.* v. i. p. 246.—WILLD. *Sp. Pl.* v. i. p. 975.—ANDR. *Rep.* t. 284.—AIT. *Hort. Kew.* ed. 2. v. i. p. 374.—PURSH, *Fl. N. Am.* v. i. p. 160.

Periclymenum racemosum, flore flavescente, fructu niveo, DILL. *Hort. Elth.* v. ii. p. 306. t. 228. f. 295.

A moderate sized shrub in its native climate, according to BROWNE, in his Natural History of Jamaica, sometimes reaching to the height of 7 or 8 feet, much branched, with the *branches* opposite, and so long and slender that they frequently require to be supported by the neighbouring plants; rounded, smooth. *Leaves* constantly opposite, one or two inches in length, ovate, gradually acuminated (except in some of the older leaves, which are simply acute) at the extremity, and, at the base attenuated into a rather short footstalk, smooth, shining, subcoriaceous, waved, entire at the margin, with a central rib, often dark above, and a few very obscure lateral nerves or veins.

The *flowers* are produced in rather small but graceful, somewhat drooping, scarcely compound racemes, from the axils of the leaves of the upper branches; very fragrant, and all of them secund. *Calyx* of five teeth, of a brownish colour, erect, entire. *Corolla* infundibuliform, pale yellow, the *tube* somewhat angular, the limb of 5 spreading and sometimes reflexed ovate segments; *Stamens* springing from the very base of the corolla, 5 in number, united by their bases, shorter than the corolla. *Filaments* white, glabrous. *Anthers* linear, pale yellow. *Germen* inferior, roundish, ovate, green, compressed, obscurely 2-lobed, 2-celled, 2-sided: *Style* longer than the tube of the calyx, white, filiform: *Stigma* clavate, bifid. *Fruit* a roundish, slightly compressed, pulpy, snow-white, 2-celled Berry, crowned with the teeth of the calyx. *Seeds* two, solitary, compressed (BROWNE), "pendent, and each attached by a short stalk to the upper extremity of the cells," (GÆRTN.)

A native of the West India Islands, particularly of Jamaica, St Domingo and Barbadoes. It is likewise found at Carthagena; and MICHAUX and PURSH mention a variety of it which is found upon the sea-shore of Georgia and Florida. Of this, however, Mr ELLIOTT takes no notice in his valuable *Flora of Georgia and South Carolina*. The North American plant, according to MICHAUX, differs from the West Indian one, simply in the leaves not being so much acuminated; but BROWNE speaks of another variety, which, indeed, he is inclined to think a distinct species, growing to a great height among the trees in the woods of Jamaica, between St Thomas's and Manganeel, and again throwing down some of its long slender twigs to the ground. Nevertheless, its leaves are similar to those of the more common kind.

The numerous berries, of a delicate white colour (which do not appear to be produced in our stoves), have given the common English name to the plant, as well as that of the genus, (from *χιον*, *snow*, and *καρπος*, *fruit*).

This shrub has been cultivated in our gardens since 1729, about which time it appears to have been introduced by Dr SHERARD. In its native climate, the root, which has a bitter acrid taste, similar to that of the *Seneka snake-root*, is employed medicinally, as a strong resolutive and attenuant.

Fig. 1. Flower. Fig. 2. Corolla cut open, to shew the stamen. Fig. 3. The Pistil. Fig. 4. Section of the Germen.—*All more or less magnified.*

Leptanthus graminea.

LEPTANTHUS GRAMINEUS.

Grass-leaved Leptanthus.

TRIANDRIA MONOGYNIA.—NAT. ORD. *JUNCEÆ.*

GEN. CHAR.—*Spatha* uniflora. *Perianthium* coloratum, inferum, tubo longissimo gracili, limbo sexpartito æquali. *Stylus* apice incrassatus. *Capsula* unilocularis, trivalvis, polysperma. *Semina* receptaculis tribus filiformibus valvarum medio affixis inserta.

L. *gramineus.*

L. gramineus, MICH. *Fl. Bor. Am.* v. i. p. 25. t. 5. f. 2.—NUTT. *Gen.* v. i. p. 29.

Heteranthera graminea, VAHL, *Enum.* v. ii. p. 45.—PURSH, *Fl. Amer. Sept.* v. i. p. 32.—ROEM. et SCHULTES, *Syst. Veg.* v. i. p. 488.

" Schollera graminifolia, WILLD. *N. Act. Soc. Scrut. Hist. Nat.* 3. p. 438."

Commelina dubia, *Jacq. Obs. Bot.* v. iii. p. 9. t. 39.

Plant aquatic, submerged, much resembling *Potamogeton gramineum;* with longish, slender, waved and geniculated subdichotomous stems, and numerous, alternate, dark green, linear, submembranaceous leaves, obtuse, about 3 inches in length, with a large, sheathing, semipellucid ligule at the base, like that of the grasses.

From the axils of the leaves springs the solitary *flower*, arising from a long, cylindrical, membranaceous spatha, and that again surrounded by the ligule of the leaf. *Perianth* single. *Tube* very long, slender, greenish, swollen at the base, where the germen is situated. *Limb* cut into six equal, spreading, linear, bright yellow segments.

Stamens three, inserted at the mouth of the tube, quite yellow. *Filament* broadly subulate. *Anther* oblong, 2-celled, cells opening longitudinally, and facing the style. *Pollen* yellow. *Germen* oblong, tapering into the very long, slender *style*, which is clavate above. *Stigma* glandular, obscurely three or six cleft. *Capsule*, when unexpanded, oblong, full of gibbosities from the swelling of the seeds within, and entirely covered with the marcescent perianth, 1-celled, 3-valved, (the valves are indicated by the suture). Each of these three valves has a filiform, zig-zag receptacle, slightly attached to its centre, upon which, on alternate sides, the seeds are inserted. These are ovate or oval, striated, with a raphis which communicates with the top, so that the seed is actually pendent. *Albumen* between fleshy and farinaceous, dense. *Embryo* cylindrical, included. *Radicle* opposite the hilum.

The genera *Heteranthera* of PALISOT DE BEAUVOIS, and *Leptanthus* of MICHAUX, are perfectly synonymous, and considered by all authors as having, besides other characters, a capsule of three cells. The present individual having only one cell, WILLDENOW thought proper to construct a new genus for it, which he denominated *Schöllera*. It appears to me, however, that, by modifying the character of the genus *Leptanthus*, it may with propriety be allowed to remain as peculiar to this species, the remaining *Leptanthi* of MICHAUX being retained in the older established genus *Heteranthera*. Besides the more important character of the capsule, our *Leptanthus* seems to differ remarkably in habit, and in the colour of its flowers, from the other individuals that have been arranged with it.

This plant is a native of Pennsylvania and Virginia, according to PURSH. Mr MURRAY of our Botanic Garden being desirous to introduce the curious *Valisneria spiralis* to our collections from Canada, wrote to his correspondent Mr KIPPIN at Montreal, to request he would send some of the mud containing roots and seeds of that curious vegetable. Along with the *Valisneria*, there came up abundance of *Najas canadensis* and *Leptanthus gramineus;* the latter, alone, however, has at present produced flowers and seeds.

The plant grows entirely submerged, and has a striking resemblance, when out of flower, to the *Potamogeton gramineum*.

Fig. 1. Upper portion of a plant, *nat. size.* Fig. 2. Flower, with its spatha. Fig. 3. Stamen. Fig. 4. Pistil. Fig. 5. Capsule, covered with the corolla. Fig. 6. Capsule laid open, to shew the insertion of the seeds. Fig. 7. Seed. Fig. 8. The same cut open vertically.—*More or less magnified.*

Tolumnia Ackleia

HABENARIA DILATATA.

Tall green-flowered Habenaria.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Gen. Char.—*Cor.* ringens. *Labellum* basi subtus calcaratum. *Glandulæ pollinis* nudæ, distinctæ (loculis pedicellorum adnatis v. solutis distinctis). —*Br. in Hort. Kew.*

Habenaria *dilatata*; labello lanceolato-obtuso basi dilatato, cornu longitudine labelli germine paulo breviore, caule folioso.

Orchis dilatata, Pursh, *Fl. N. Am.* v. ii. p. 588.—Nutt. *Gen. of N. Am. Pl.* v. ii. p. 189.

Root fasciculated; the fibres large and thick, some of them larger at the base, so as to be somewhat fusiform. *Stem* a foot or a foot and a half high, gradually tapering upwards, angular. *Leaves* several, lanceolate, striated, becoming smaller and bracteiform upwards.

Spike from 3 to 5 inches long, of rather distantly and somewhat spirally arranged flowers. *Bracteæ* linear-lanceolate, green, the lower ones longer than the flower, the uppermost shorter. *Corolla* pale yellow-green, the three uppermost segments ovate, connivent, and forming a helmet above the organs of fructification; the two lateral ones reflexed; the lowermost one, or *lip*, deflexed, lanceolate, obtuse, dilated at the base, quite entire, of the same colour as the rest of the flower. *Spur* cylindrical, curved, shorter than the germen. *Column* very short. *Stigma* transverse, convex. *Anther* terminal, of two cells, whose bases are set apart; each containing a clavate, yellow *pollen-mass*, which have their glands naked. *Germen* short, green, twisted, ribbed, thickest upwards.

Introduced into the gardens of this country from Canada in the year 1823, by Mr Goldie, who sent me the plant here figured from his garden at Monkwood Grove, Ayr, in August; and by Mr Cleghorn, whose plant flowered in our Botanic Garden at the same season of the year. It is not, however, confined to the more northern parts of America: I have long ago received fine specimens from my friend Mr

Boott, gathered near Boston; and Mr Nuttall has seen it growing in Franklin county, Pennsylvania.

Its nearest affinity is with *Hab. hyperborea*, which differs in its much smaller size, and, according to Pursh, in its lanceolate lip, not spreading at the base, in the subulate spur, and ovate spike.

Fig. 1. Front view; and, Fig. 2. Back view of a flower. Fig. 3. Lip and Column.—*All more or less magnified.*

Banksia verticillata

F. Ivan Chapt. Sculp.

BANKSIA VERTICILLATA.

Whorl-leaved Banksia.

TETRANDRIA MONOGYNIA.—Nat. Ord. *PROTEACEÆ.*

Gen. Char.—*Perianthium* quadripartitum (raro 4-fidum). *Stamina* apicibus concavis laciniarum immersa. *Squamulæ* hypogynæ 4. *Ovarium* biloculare, loculis monospermis. *Folliculus* ligneus; *dissepimento* libero, bifido. *Amentum* flosculorum paribus tribracteatis!—*Br.*

Banksia *verticillata;* foliis verticillatis lingulato-oblongis obtusis muticis: subtus aveniis niveis, bracteis amenti tomentosis obtusis: involucrantibus hirsutis, caule arboreo.—*Br.*

Banksia verticillata, Brown *in Linn. Trans.* v. x. p. 207.—*Ejusd. Prodr. Fl. Nov. Holl.* p. 394.—Ait. *Hort. Kew.* ed. 2. v. i. p. 216.

A *tree,* according to Mr Brown, with terete, yellowish-brown branches, the younger ones subpubescent, their extremities hairy with thick brown hairs, the rest glabrous. *Leaves* placed in whorls of 4 or 6, lingulato-oblong, placed upon short footstalks, erecto-patent, quite entire at the margin, and slightly recurved, the upper side glabrous, dark green, the under side white, with short cottony pubescence; the extremity obtuse or even retuse, muticous, or in the younger ones sometimes terminated with a short hair or bristle-like point. *Midrib* prominent beneath, and green, glabrous, in the uppermost leaves covered with numerous brown bristles. *Amentum* terminal, appearing lateral only in consequence of the putting forth of a new shoot beneath it, cylindrical and elongated, densely clothed with truncated, red-brown, very silky scales or bracteas; these are placed in threes (two small and one larger one) beneath each pair of flowers, and upon a hairy receptacle.

Flowers in pairs: each of 4 petals, forming a tube by the cohesion of the petals or leaflets of the perianth, which afterwards become more or less separated, curved, especially towards the extremity. *Laminæ* ovate, for some time cohering together, very concave within, the margin thickened, and tawny; the claws slender, yellowish, their base hairy. *Stamens* placed one within the concave extremity of each petal. *Filament* short: *Anther* oblong yellow. *Pistil* single. *Germen* roundish, small, hairy at the top, the base surrounded with 4 small, oblong, obtuse, upright scales. *Style* yellowish-green, very long and singularly rigid, exceeding the corolla in length, bursting with its middle through the side of the corolla with a remarkable curvature, but retained at its extremity for some time within the closed laminæ of the corolla. *Stigma* ovato-oblong, yellow.

A genus of 31 species, as enumerated in the admirable monograph on the *Proteaceæ*, by Mr Brown, in the Transactions of the Linnean Society; of which about two-thirds have been introduced to our gardens, although very few have been figured in our various botanical publications.

The individual here given, remarkable for its verticillate entire leaves, of a pure white on the under side, was discovered by Mr Menzies in New Holland, and brought by him to our gardens in 1794. It was afterwards seen by Mr Brown in Lewin's Land, on the south shores of New Holland, and was by him first described in the place above quoted. Mr Shepherd was so good as to send me a fine flowering specimen in September 1813 from the Liverpool Garden, from which the accompanying figure was taken.

The blossoms yield a smell which is rather powerful, and by no means agreeable.

Fig. 1. A pair of flowers, with their accompanying bracteæ. Fig. 2. Single flower. Fig. 3. Lower part of the style and germen. Fig. 4. Extremity of a petal, containing the Anther. Fig. 5. Bracteæ,—*All but* Fig. 1. *more or less magnified.*

Calystegia spithamea

M. Vivin Lith. Paris

CALYSTEGIA SPITHAMÆA.

Small upright Bear-bind.

PENTANDRIA MONOGYNIA.—NAT. ORD. *CONVOLVULACEÆ.*

GEN. CHAR.—*Calyx* 5-partitus, bracteis duabus foliaceis inclusus. *Corolla* campanulata, 5-plicata. *Stamina* subæqualia, limbo breviora. *Ovarium* semibiloculare, 4-spermum. *Stylus* indivisus. *Stigmata* 2, obtusa (teretia vel globosa). *Capsula* unilocularis.

Herbæ lactescentes, glabræ, volubiles v. prostratæ (extra tropicum provenientes). Pedunculi solitarii, uniflori.—BR.

Calystegia *spithamæa ;* erecta pubescens; foliis subcordato-ovalibus obtusis, pedunculis unifloris foliis brevioribus, bracteis ovatis acutis, caule superne florifero.—*Pursh.*

Calystegia spithamæa, PURSH, *Fl. of N. Am.* v. i. p. 143.
Convolvulus spithamæus, WILLD. *Sp. Pl.* v. i. p. 873.—ELLIOT'S *Bot. of S. Carol. & Georg.* v. i. p. 251.—*Hort. Kew.* ed. 2. v. i. p. 337.

Root flagelliform, and much creeping, cylindrical, yellowish, perennial (not biennial, as mentioned in Hort. Kew.) *Stem* erect, about a span high in its native country, nearly a foot in height when cultivated, rounded, pubescent, simple or slightly branched, branches from the axils of the leaves. *Leaves* an inch and a half to two inches in length, cordato-ovate, obtuse, the lowermost ones broader, shorter, and more obtuse, all upon shortish footstalks, and pubescent.

Flowers axillary, solitary, shorter than the leaves, large, handsome, white. *Peduncles* about two inches long, downy, triangular upwards. *Bracteæ* of two large, concave, ovate, acute, nerved, pubescent, opposite, erect leaflets. *Calyx* of 5 small, erect, glabrous, shining, pale leaflets, which are entirely covered and concealed by the bracteæ. *Corolla* campanulate, the limb spreading, large, cut into 5 obtuse, subcrenulate, rounded, plicate lobes. *Stamens* shorter than the tube. *Filaments* subulate, compressed, white, with yellowish glands at the margins. *Anthers* oblong, yellow. *Pistil* as long as the stamens. *Germen* small, 5-lobed. *Style* filiform, white. *Stigmas* two, rounded, incurved.

Introduced to this country from North America by WILLIAM HAMILTON, Esq. in 1796, according to Hortus Kew-

ensis; but still, I believe, rare in our gardens, and no figure has yet appeared in any publication.

PURSH mentions it as inhabiting, but rarely, dry hills from Pennsylvania to Carolina; and Mr ELLIOTT gives the same stations, from which I infer that he has not himself seen it in a wild state. The specimen here figured, flowered in Mr SMITH's Nursery, Ayr, from roots brought by Mr GOLDIE from the northern part of the State of New York, where they grew in sandy woods.

The genus *Calystegia* was established by Mr BROWN, and designed to include particularly our *Convolvulus sepium* and *soldanella*. The learned author, I am aware, mentions the *Conv. spithamæus* as doubtfully belonging to it. But as the bracteæ so entirely accord with one of the most essential characters of the genus, I have followed PURSH and the author of the *Hortus Suburbanus*, in retaining it in *Calystegia*.

The *Cal. tomentosa* of PURSH (*C. stans*, MICH.), seems to be very nearly allied to the present species, as far as I can judge from the definition, the principal characters consisting in the tomentose rather than pubescent covering to the former, the acuminate leaves, and the stem bearing flowers from its lower part.

Fig. 1. Flower in bud. Fig. 2. Bracteæ, calyx and pistil. Fig. 3. Pistil. Fig. 4. Stamen.—*All more or less magnified.*

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Berberis aristata

BERBERIS ARISTATA.

Aristate Barberry.

HEXANDRIA MONOGYNIA.—NAT. ORD. *BERBERIDES.*

GEN. CHAR.—*Calyx* hexaphyllus (squamis 3 extus stipata). *Petala* sex, intus biglandulosa. *Antheræ* valvis dehiscentes. *Bacca* monolocularis, di- tri- (poly-) sperma.—*DC.*

Berberis *aristata*; spinis simplicibus tripartitisve, foliis coriaceis obovato-oblongis ciliato-dentatis (integerrimisque), racemis compositis nutantibus multifloris, petalis emarginatis.

B. aristata, DE CAND. *Syst. Veg.* v. ii. p. 8.

" B. chitria, BUCHAN. *in Herb. Linn.*"—*Bot. Reg.* t. 729.

B. sinensis, DESF. *Cat.* 1804, p. 150.?—DE CANDOLLE, *Regn. Veg.* v. ii. p. 8.

The *flowering plants* in our garden scarcely exceed two feet in height, branched, the branches erect, brown, terete, their new shoots almost red. *Leaves* in clusters of four or five, dark green, (in the young shoots pale green, and margined with red), coriaceous, nerved, reticulated when dry, oblongo-obovate, attenuated at the base, acute at the extremity, their margins more or less ciliato-dentate, in some varieties occasionally quite entire. At the base of each cluster of leaves is a single or trifid *spine*, having its segments spreading, of a greenish colour inclining to red, succulent when young; when old hard and brown.

From the centre of several of these clusters of leaves arises a drooping *raceme*, about four inches long, with the pedicels branched and forked, each of the ramifications of a reddish colour, swollen at the extremity and at the base, the latter being invested with numerous, small, acute, bright red bracteas. *Flower* large, drooping, having externally at the base four or six concave deciduous *bracteas*, red in the outer ones, the innermost yellow, and gradually assuming the shape of the leaflets of the calyx. *Calyx* of six leaves, alternately larger, yellow, entire. *Corolla* of six regular, nearly erect, ovate, concave petals, with two folds or plicæ within, two small, honey-bearing glands near the base, and notched at the top. *Stamens* six, one within each petal, yellow. *Filament* stout, protruded beyond the cells of the *Anther*, which are placed on each side of the filament, and open by valves which fly upwards to permit of the escape of the *Pollen*. *Germen* oblong, green. *Style* extremely short, thick. *Stigma* large, thick, greenish, peltate.

Raised from seeds which were sent to our Botanic Garden by Dr WALLICH, who had received them from Nepal, where this species of *Berberis* appears to have been first discovered by Dr BUCHANAN HAMILTON. It forms a small and handsome shrub, not much unlike the common European species, but with leaves of a far more coriaceous texture, and more distinctly ciliato-dentate, its flowers much larger, and with more spreading floral coverings, and the petals emarginate at the extremity.

I find by the specimens of this plant in my herbarium, which I have received from Dr WALLICH, and from Sir JAMES E. SMITH, that not only are its leaves liable to much variation in their greater or less degree of denticulation, some of these being quite entire at the margins; but also that the spines are equally dissimilar, many being quite simple, others having two small lateral spines, and others again with all of these equal in length: sometimes they are wholly wanting.

Fig. 1. A flower-bud shewing its bracteas, which soon after expansion fall away. Fig. 2. Expanded flower. Fig. 3. Stamen with cells opening by valves. Fig. 4. Pistil with its two glands. Fig. 5. Pistil: *a*, The receptacle from which the petals and the calyx are removed; *b*, The enlarged summit of the pedicel.—*All more or less magnified.*

Calceolaria rugosa

CALCEOLARIA RUGOSA.

Sage-leaved Slipper-flower.

DIANDRIA MONOGYNIA.—NAT. ORD. *SCROPHULARINÆ, Juss. Br. Kunth.*

GEN. CHAR.—*Calyx* quadripartitus. *Corolla* bilabiata; labium inferius inflatum, calceiforme. *Capsula* semibivalvis: valvulis bifidis.—*Vahl.*

Calceolaria *rugosa;* foliis lanceolatis inæqualiter serratis rugosis glabris, pedunculis terminalibus di- trichotomis.

C. rugosa, " *Fl. Peruv.* v. i. p. 19. t. 28. f. 6."—VAHL, *Enum.* v. i. p. 188.

C. integrifolia; foliis indivisis, " LINN. *in Act. Holm.* 1770?—*Syst. Veg.* ed. 13. p. 61 ?"

" Calceolaria salviæ folio, vulgo Chacaul, FEUILL. *Peruv.* v. iii. p. 13. t. 7. f. 1."

Stem one and a half to two feet in height, erect, branched from the axils of the leaves, particularly near the base, terete, of a purple-brown colour, slightly pubescent or hairy above. *Leaves* numerous but distant, opposite and connate at the base, lanceolate, patent and recurved, acute, attenuated at the base into a short kind of footstalk, the margin acutely and distantly unequally serrated or dentato-serrate, distinctly veined and wrinkled, beneath having the veins prominent; the whole of the leaves are glabrous, except in the young leaves, where a decided pubescence is visible on the under side: the colour a yellowish-green.

Flowers placed in large, handsome panicles, at the extremity of the stems, the panicle di- or trichotomous in its ramification, the ultimate branchlet, however, being subumbellate. *Bracteas* placed in pairs at the base of each division of the panicle, the lowermost ones scarcely differing from the leaves but in being shorter and broader, the upper ones gradually smaller and more cordate.

Calyx of four green, spreading, broadly ovate obtuse leaves, glabrous or very minutely ciliated at the margin, veined. *Corolla* of a fine deep yellow, large and glabrous, slipper-shaped; the upper lip remarkably short, the lower one large, globose, with the sides and extremity singularly involute and hidden within the cavity, the whole curved upwards so as to cover the upper lip, and almost wholly concealing it. *Stamens* placed upon a raised margin at the base and within the upper lip of the corolla; *Filaments* short, subulate. *Anther* white, of two oblong lobes, placed end to end, and deflexed before bursting, and white, afterwards rising up-

wards, becoming horizontal, and opening on the top. *Pollen* whitish. *Germen* broadly ovato-conical, green, minutely glandular, running up into a shortish style. *Stigma* rather acute.

Under my description of *Calceolaria paralia*, I hinted at another fine species of this genus, likewise received from Chili, which was expected soon to blossom in the stoves of the Botanical Garden at Edinburgh. Fine flowering specimens of this were sent to me by my valued friend Dr GRAHAM in July, together with an exact delineation of the plant by Mr GREVILLE.

Here, again, as in the former instance, I have to regret my inability to have recourse to the rare works on the Peruvian Plants, published by CAVANILLES, FEUILLEE, and RUIZ and PAVON. As far, however, as I can judge from the descriptions of the *Calceolariæ* in VAHL's *Enumeratio Plantarum*, the present individual is the *C. rugosa* * of that work and of the *Flora Peruviana*, where it is described as an inhabitant of sandy places in Chili.

In the size and general aspect of the flowers, a considerable affinity may be perceived between this and the *C. paralia* already figured in this work; but here the involution of the margin, and the curvature of the lower lip, are much more remarkable. The leaves are quite different, numerous upon the stem, much resembling, as is remarked in the *Enumeratio Plantarum*, those of *Salvia officinalis*.

Fig. 1. Corolla. Fig. 2. Section of the same. Fig. 3. Flower from which the lower lip of the corolla is removed, to shew the upper lip enclosing the pistil and the stamens. Fig. 4. Stamens. Fig. 5. Stamen, after the opening of the valves of the Anther. Fig. 6. Calyx and pistil.—*All more or less magnified.*

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* Since the above description was written, a *Calceolaria* has appeared in the 744th Plate of the Botanical Register, which is given as the true *C. integrifolia* of LINN. Syst. Veg. This plant we possess in the Botanic Garden; but it has not blossomed with us. It differs from our *C. rugosa*, in the downy, larger, and more regularly serrated leaves, and, according to the figure, in the pubescent corolla.

Cucurbita alba

CAROLINEA ALBA.

White-flowered Carolinea.

MONADELPHIA POLYANDRIA.—Nat. Ord. *MALVACEÆ.*

Gen. Char.—*Calyx* subtruncatus. *Filamenta* ramosa. *Stylus* longissimus. *Stigmata* sex. *Capsula* lignosa, unilocularis, polysperma.—*W.*

Carolinea *alba;* foliis septenatis, foliolis elliptico-lanceolatis, corolla extus fasciculato-tomentosa, tubo staminifero longo quinquelobo, filamentis dichotomis.

C. alba, Loddiges, *Bot. Cabinet,* t. 752.

Stem arboreous, of considerable height, twenty feet in the stove of the Liverpool Garden. *Leaves* upon footstalks, a foot or more long, septenate, leaflets from 4 to 6 or even 8 inches in length, elliptical, lanceolate, entire, glabrous, veined, rather obtuse at the point, at the base tapering rather suddenly into a petiole of about an inch in length.

Flowers solitary, axillary. *Peduncle* about an inch and a half long, thick, green. *Calyx* an inch in length, and rather more in breadth, cup-shaped, glabrous, green, truncate at the margin, or very obscurely or obtusely lobed, within brown and shining, yellow in the lower half. *Petals* five; four or five inches long, linear-oblong, slightly connected at their very base, white, with a greenish tinge, or yellowish only in the lower half: between membranaceous and carnose, and covered with numerous, minute, scattered tufts of short dark fasciculated hairs, which give the whole a pubescent appearance, within glabrous. *Tube of the stamens* about an inch and a half or two inches long, cylindrical, white, thick and fleshy, at the top five-lobed, having the outside of the lobes bearing a great number of long, white, forked *filaments,* rather shorter than the corolla, each branch tipped with a reniform, single-celled, transverse, brown *Anther,* of which the under side is waxy, and apparently discharges pollen as well as the vertical suture above, which *never* appears to expand, but which, when cut open, is found to contain also a waxy substance, mixed with the pollen. The *pollen,* however, separates from this, and is seen scattered over the surface of the anthers, in the form of triangular, flat granules, with a globule at each angle. Sometimes there are two cells upon one filament; but in that case the filament is not forked: so that it would appear, that the bifurcation is the splitting of a filament, each of which carries a cell of the anther. *Pistil: Germen* small, ovato-oblong, yellow, with 6 angles, and 6 (or 7) cells, tapering into a filiform *style,* rather longer than the stamens, slightly curved, white at the base, the

rest rose-coloured. *Stigma* obscurely 6 or 7-lobed, distinctly so in Loddiges' figure, so that perhaps mine was injured in the carriage.

First noticed by Messrs Loddiges in their Botanical Cabinet, and figured there under the name of *Carolinea alba*; but unfortunately without any specific character, or indication of marks, by which it might be distinguished from other species of the same genus.

Native of the Brazils, and communicated to me by my attentive friends Messrs Shepherds of the Liverpool Garden, in the month of January. The blossom exhales a faint and unpleasant smell.

On comparing this plant with some noble specimens of *Carolinea insignis*, which I received from my valued correspondent the Reverend Lansdown Guilding of St Vincent's, a very striking similarity was observable between them. The leaves are very nearly the same, and so is the general aspect of the inflorescence; but in the *C. insignis*, the flower is almost twice the length of that of *C. alba*, the tube of the stamens is divided into a number of bundles of filaments, and the outside of the corolla is wholly and minutely pubescent, and by no means fasciculato-pubescent.

Very nearly allied to the present plant, is likewise the *Bombax heptaphyllum*; the flower of which, in the specimens sent to me by Dr Carey of Serampore, has the petals clothed on the outside with a similar fasciculated pubescence; but of which the calyx is deeply lobed, the petals are short and broader, and the filaments, though decidedly forked, have only a very short tube at the base. Still, I should think, in spite of these differences, that the two plants properly belong to the same genus. Indeed, as it appears to me, the genera of *Bombax*, *Carolinea* and *Pachira*, require a thorough revision, and ample descriptions to be made from fresh specimens. In having cells to the fruit, this plant departs from the generic character of *Carolinea*.

Fig. 1. Forked filament. Fig. 2, 3. Anthers. Fig. 4. Double anther. Fig. 5. Pollen. Fig. 6. Calyx cut open, shewing the pistil. Fig. 7. Section of the germen. Fig. 8. Portion of a petal, to shew the tufts of hairs. Fig. 9. Tuft of hairs.—*All more or less magnified.*

Tragopogon pratensis

TRIXIS SENECIOIDES

Groundsel-like Trixis.

SYNGENESIA POLYGAMIA ÆQUALIS.—Nat. Ord. *CICHORACEÆ*, Div. LABIATIFLORÆ, *De Cand.*—Trib. NASSAUVIÆ, *Cass.*

Gen. Char.—*Involucrum* ovatum, imbricatum, foliolis inæqualibus. *Flosculi* omnes hermaphroditici, bilabiati, *exteriores* majores radium æmulantes, *labio* exteriore plano majore tridentato; interiore parvo bidentato. *Pappus* pilosus, sessilis. *Receptaculum* nudum aut subpilosum.—*De Cand.*

Trixis *senecioides*; herbacea pubescens, foliis sinuato-pinnatifidis dentatis, caulinis amplexicaulibus.

An annual, herbaceous, slender *plant*, of about one foot, or a foot and a half in height. *Stem* branched, especially upwards, in a dichotomous manner, branches pubescent. *Leaves* distant, the lower ones 3 or 4 inches in length, oblong, rather narrower towards the base, when they become semi-amplexicaul, throughout their whole length sinuato-pinnatifid; the segments rounded, and more or less toothed: the upper leaves (mostly at the dichotomies of the branches) much smaller, toothed and lobed at the margin, waved and subtortuose, amplexicaul, broad and almost auriculated towards the base, all of them rather dark green, and very minutely pubescent, on the under side whitish and somewhat cottony. *Flowers* of a moderate size, pure white. *Involucre* hemispherical, composed of several linear-lanceolate, imbricated, erect, pubescent *scales*, the outermost of which are the smallest. *Receptacle* flat, punctated, naked in the centre, near the margin having a circle or single series of upright, glabrous, chaffy, linear-oblong, denticulated *scales*, nearly equal in height to those of the involucre.

Florets, a few of the larger ones on the outside of the chaffy scales of the receptacle, but the greater number within them, tubular in the lower half, above divided into two very unequal ligulate lips; of these the outer one is much the largest, ovato-oblong, more or less recurved, and obscurely 3-toothed at the extremity, pure white; the interior one small, revolute, ligulate, at first white, at length transversely wrinkled and horn-colored. The larger lip I have, in one instance, seen divided into two unequal portions longitudinally.

Stamens 5, syngenesious. *Anthers* yellow, their base produced on each side, their extremities with long upright appendages, which, from a yellowish colour at first, become afterwards almost black. *Germen* oblong, hispid,

surmounted with a *pappus*, which is covered with shortish hairs. *Style* at first (as well as the stigma) concealed within the anther-tube, afterwards exceeding it in length, white. *Stigma* bipartite, segments linear, spreading, extremities obtuse.

Achenium (immature) oblong. *Pappus* plumoso-pilose.

A native of Chili, whence seeds were communicated to our garden by Mr Cruikshanks. The plant blossomed in the months of August and September in the greenhouse, and presented, in that state, both in its leaves and flowers, a striking similarity to those of *Senecio elegans*.

On a more accurate inspection of the structure of the blossoms, however, it will be at once seen that the plant cannot belong to the same order of the Class *Syngenesia*; the florets being by no means in any part tubular, nor do they accord with the generality of the ligulate florets of the Nat. Ord. *Compositæ*; for here the corolla is distinctly two-lipped, one lip, indeed, being considerably smaller than the other, and soon becoming revolute, coloured, and wrinkled.

Of a considerable number of plants belonging to this family, having the peculiarity of structure just mentioned, Lagasca and De Candolle, about the same time, constituted a tribe, distinct from the other *Compositæ*, but whose place was between the *Cichoraceæ* and *Cinarocephalæ*; the former giving it the name of *Labiatifloræ*; the second that of *Chænanthophoræ*. Most of the genera of this tribe are included either in the *Mutisiæ* of Cassini, or else in his *Nassauviæ*; to the latter our present plant belongs. That author, guided by natural affinities, has, with great propriety, placed the *Nassauviæ* next to *Senecioneæ*.

Fig. 1. Section of the receptacle and involucre. Fig. 2. Scale of the involucre. Fig. 3. Scale of the receptacle. Fig. 4. Young floret, the lips not fully expanded. Fig. 5. Floret from the centre of the receptacle. Fig. 6. Floret from the circumference. Fig. 7. Anthers. Fig. 8. Young fruit. Fig. 9. Portion of the pappus.—*All more or less magnified.*

Coccoloba diversifolia

COCCOLOBA DIVERSIFOLIA.

Various-leaved Seaside Grape.

OCTANDRIA DIGYNIA.—NAT. ORD. *POLYGONEÆ.*

GEN. CHAR.—*Calyx* quinquepartitus, coloratus. *Corolla* 0. *Bacca* calycina, monosperma.—*W.*

Coccoloba *diversifolia*; foliis ramusculorum ovatis, ramorum ovato-cordatis.—*Jacq.*

C. diversifolia, JACQ. *Am. Bot.* p. 114. t. 76.—WILLD. *Sp. Pl.* v. ii. p. 458.

A small *tree*, reaching in the stove of the Liverpool Botanic Garden to the height of eight or ten feet, compact in its mode of growth. *Branches* cylindrical, greenish-brown, the young ones green. *Leaves* varying from ovato-cordate, as are the greater number, to ovate, as in those growing upon the ultimate branchlets; subcoriaceous, smooth, bright green, rather shining, glabrous, the margin quite entire, the extremity rather obtuse, veined, petiolated; *petioles* short, flattened above.

Racemes, or rather *spikes*, from four to six inches in length, filiform, green. *Flowers* rather distantly placed, in pairs (*vide* Fig. 4.), each pair inclosed in a somewhat truncated, membranaceous *bractea*, nearly sessile; *one* flowering long before the other. *Calyx* deeply divided into five ovate lobes, about half inferior, pale yellow-green, concave, slightly tubercled externally, at length reflexed: its æstivation imbricating. *Corolla* none. *Stamens* eight, scarcely longer than the segments of the calyx, filiform, all united into one annular body at the base around the pistil. *Anthers* didymous, pale yellow. *Pistil: Germen* more than half inferior. *Styles* three, tapering upwards, curved at the extremity, and obtuse at the point; *Stigmas* obtuse.

Native of the West Indies (St Domingo, according to JACQUIN), and received by Messrs SHEPHERD at the excellent Botanic Institution of Liverpool under the name of *Coccoloba barbadensis*. From that species, however, as it is figured and described by JACQUIN, *Obs.* t. 8. who only appears to have known the plant without flower, it differs in the even, not waved margin of its leaves; and it appears so entirely to

agree with the *C. diversifolia* of the same author, published in his *Stirpes Americanæ*, that I have no hesitation in adopting that specific name. The germen is, for the greater portion of its length, inferior, in at least this species of the genus; and the fruit is described by JACQUIN as a roundish drupe, about the size of a small cherry, umbilicated and furrowed at the top by the connivent segments of the calyx or perianth. This fruit is of a beautiful purple colour within, possessing a flavour similar to that of *C. uvifera*, but more austere, and is eaten only by children and the Negroes.

The annexed delineation was taken in the month of January.

Fig. 1. Front view of a flower. Fig. 2. Stamen. Fig. 3. Upper part of the Germen and Styles. Fig. 4. Two flowers surrounded by the bractea; *a*, Inferior portion of a germen; *b*, Unexpanded stamens of the calyx. Fig. 5. Pistil; the calyx and stamens being removed.—*All more or less magnified.*

Polystachya luteola.

POLYSTACHYA LUTEOLA.

Pale-flowered Polystachya.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Gen. Char.—*Petala* resupinata, conniventia, duobus superioribus basi unitis gibbosis duobus interioribus multo minoribus. *Labellum* articulatum, sessile. *Anthera* operculiformis, libera. *Massæ Pollinis* quatuor, hemisphæricæ, ceraceæ, pedicello glanduloso affixæ.

Polystachya *luteola.*

Dendrobium polystachion, Swartz, *De Orchid.* p. 95.—Willd. *Sp. Pl.* v. iv. p. 137.—Lindl. *Coll. Bot.* t. 20.

Cranichis luteola, Sw. *Ind. Occ.* v. iii. p. 1433.

Epidendrum minutum, Aubl. *Pl. Guian.*

Root composed of several thickish, white, flexuose, simple fibres. *Stem* none. *Leaves* two in number, from three to five inches long, lanceolate, obtuse, obscurely striated, attenuated at the base, and springing from a small bulb, which is ovate and covered at its base, where it is fixed upon the fibres, with brown membranaceous scales.

Scape about seven inches in height, much compressed, two-edged, and clothed with a long membranaceous sheath, bearing at the extremity five or six racemes or spikes of small, pale green, resupinate * flowers, which have each a minute lanceolate bractea. *Peduncle* or rachis about an inch long, beset with as many teeth-like bracteas as there are flowers. The three outer segments of the *corolla* are subconnivent and green, the two outermost ones much the largest, broadly ovate, united at the back, and very gibbous above, somewhat open in the front, one-nerved, the lowermost one narrow, standing forward. The two inner segments very narrow, linear, pale green. *Lip* yellowish, articulated with the decurrent base of the column, obovato-oblong, standing forward, concave, downy within, three-lobed at the extremity, the two lateral lobes small, straight, the intermediate one broad, curved back, waved. *Germen* rather longer than the flower, subclavate, furrowed. *Column* very short, its base decurrent with the back of the two superior petals, and thus uniting them.

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* Or, more properly speaking, not *resupinate.* In most orchideous plants, the labellum is on the underside of the flower; but this position, as Mr Brown has justly remarked, is owing to a twist in the germen. Here the germen is in its most natural position, and the lip is uppermost.

Stigma subquadrate, concave. *Anther* terminal, subhemispherical, two-celled. *Pollen-masses* two, spherical, bipartite, or rather perhaps four in number, placed in pairs, affixed to a short, white glandular footstalk.

From the Liverpool collection, to which it was sent from the East Indies by Dr WALLICH. SWARTZ states that the *Polystachya* is an inhabitant of the Isle of France, as well as of Jamaica and Hispaniola in the West Indies.

Mr LINDLEY has given an admirable figure and description of the plant in his *Collectanea Botanica*; but he had not seen the pollen-masses in a perfect state. Still, judging from the habit of the individual, he thought that it would be desirable to divide it from *Dendrobium*. The nature of its pollen-mass is indeed quite different, and the general structure of the flower is also very unlike that of either *D. Pierardi* or *D. fimbriatum*; hence, not finding that this plant would agree with any genus of orchideous plants hitherto described, I have constituted a new one, derived from πολυς, *many*, and σαχυς, *a spike*, in allusion to its numerous spikes borne upon the same scape; a circumstance so unusual in this family.

Fig. 1. Side-view of a flower. Fig. 2. Front view of the same. Fig. 3. Front view of a flower, the lip being removed, and the petals somewhat spread open. Fig. 4. Inner view of the lip. Fig. 5. Column. Fig. 6. Inner view of an anther-case. Fig. 7. Pollen-mass.—*All more or less magnified.*

Adiantum caudatum.

ADIANTUM CAUDATUM.

Attenuated Maiden-hair Fern.

CRYPTOGAMIA FILICES.—NAT. ORD. *FILICES.*

GEN. CHAR.—*Sori* elongati vel subrotundi. *Indusiis* membranaceis e margine ortis, internis dehiscentibus, inserti.—*W.*

Adiantum *caudatum*; hirsutulum, frondibus pinnatis, pinnis oblongis obtusis dimidiatis basi truncatis, margine superiore inciso-laciniato, laciniis emarginatis, indusiis hirtis, rachi pubescente apice nuda elongata radicante.

A. caudatum, WILLD. *Sp. Pl.* v. 5. p. 431.—SCHKUHR, *Filic.* t. 117.—BURM. *Zeyl.* p. 8. t. 5. f. 1.

A. hirsutum, WILLD. *Sp. Pl.* p. 432.

Stipes long, curved, rounded, purple, scaly at the base. *Fronds* a foot or more long, linear-lanceolate, flexuose, pinnated; pinnæ rather closely placed, horizontal, the largest of them nearly an inch in length, oblong and dimidiate, or semiovate, obtuse, truncated at the base, slightly hairy and veiny on both sides, deeply cut on the upper edge into about five linear, parallel, often bifid segments, each emarginate at the point and ciliated; the barren extremities crenated. *Rachis* deep purple, hairy on the upper surface, glabrous on the under side, lengthened out at the extremity, naked, curved, and rooting at the very point.

The *Indusium* or *Involucre* is formed by the curving inward of the extremity of each segment of the pinnæ, brown, hairy, rotundate. The inside of this (Fig. 3.) is covered with a great number of minute, brown, rounded, pedicellate *capsules.*

This elegant Fern, which has not yet, so far as I am aware, been cultivated in our stoves, is said by WILLDENOW to be a native of Arabia Felix, Malabar, Ceylon, and Java. Dr BUCHANAN HAMILTON found the specimen from which the accompanying figure was taken, at Gualpara, in the year 1808; and he states generally, that it is an inhabitant of shady spots

in Bengal. In his notes, Dr HAMILTON has correctly observed, that BURMANN's figure in the *Thesaurus Zeylanicus*, has the pinnæ much less deeply cut than in our plant; still, I think that it is intended for the same species.

WILLDENOW's *Adiantum hirsutum* seems to differ scarcely at all from this.

Fig. 1. Single pinna. Fig. 2. Extremity of a segment, with fructification. Fig. 3. Indusium forced back, to shew the cluster of capsules attached to its under side. Fig. 4. Capsule and seeds.—*All more or less magnified.*

Primula sinensis

R. K. Greville Delt.

Edwin Lloyd Sculp.

PRIMULA SINENSIS.

Splendid Chinese Primrose.

PENTANDRIA MONOGYNIA.—NAT. ORD. *PRIMULACEÆ.*

GEN. CHAR.—*Calyx* quinquedentatus. *Corollo* hypocrateriformis, tubo cylindrico, ore nudo. *Stigma* globosum. *Capsula* unilocularis, decemdentata.

Primula *sinensis*; foliis lobatis incisis hirsutis, floribus verticillatis, corollæ limbo obliquo, calyce conico-inflato.

P. sinensis, SABINE, MSS.

α, Calyce quinquedentato, corollæ limbo integerrimo.—*Tab.* 105.

β, Calyce subdecemdentato, corollis crenato-incisis. Primula sinensis, LINDLEY, *Coll. Bot.* t. 7.

Primula prænitens, *Bot. Reg.* t. 529.

Root perennial. *Leaves* very soft, all of them radical, petiolated, hairy, divided into about seven, rather deep, ovate lobes, which are subtrifid, cut and bluntly serrated, of a rather dingy green colour, often purple beneath, where the nerves are prominent. *Petiole* about two or three inches long, cylindrical, purple, grooved at the top, hairy.

Scapes from four to six inches high, two or three of them arising from the same root, cylindrical, hairy, and each bearing two or three whorls of large, showy flowers, whose fragrance is very similar to that of the common primrose *, (*P. acaulis*). *Bracteas* lanceolate, cut into long segments at the margin, one to each pedicel. *Pedicels* two or three inches long, slender, filiform, patent, hairy.

Calyx conical, inflated, hairy, veined, in α having five distinct acute teeth, in β about ten unequal teeth, or being irregularly multidentate, hairy. *Corolla* an inch, or an inch and a half in diameter, hypocrateriform; its *tube* subcylindrical, yellow, slightly hairy, the *limb* constantly oblique, divided into five large, closely placed, obcordate, pale purple segments, notched at the extremity, but otherwise being entire at the margin of α; while in β, the margin of the segments is inciso-dentate; the *eye* bright yellow.

Stamens placed within the tube, sometimes near the mouth, sometimes halfway down. *Filament* white, short, scarcely indeed existing. *Anthers* oblong, yellow. *Germen* small, ovate, green. *Style* filiform, nearly as long as the calyx. *Stigma* capitate.

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* The same scent is observable, though in a fainter degree, upon the foliage.

After such valuable figures and descriptions of this plant had been given as those in the *Collectanea Botanica* and the *Botanical Register*, I should hardly have ventured upon again bringing this species before the public, were it not, that, owing to the extension of its cultivation, it has been found to vary from its original types, and thus to have effaced the most striking marks upon which its original specific character was founded;—marks by which, in the opinion of Mr LINDLEY, it seemed at variance with that of the genus itself, namely, its ten-toothed or multidentate calyx, and its inciso-crenate corolla. In the two individual plants which I have had the opportunity of examining, the one in the Botanical Garden of Edinburgh, the other in that of Glasgow, both derived from the Horticultural Society of London, the calyx is constantly and distinctly five-toothed; and the corolla has its margin as entire as that of any other *Primula*.

The variation (for the subject of the present plate we shall consider as the original stock) may, as Mr GAWLER has intimated, arise from luxuriance, or it may prove to be of a more permanent nature.

The obliquity of the limb of the corolla is a striking and very constant character, as is also the verticillate inflorescence.

Our plants of *P. sinensis* have been in flower during almost the whole winter, being kept in a cool airy part of the greenhouse; but the season is unfavourable to the ripening of the seed.

For the truly beautiful drawing from which the annexed engraving was made, I am indebted to my friend R. K. GREVILLE, Esq.; and for many of the above remarks to Dr GRAHAM.

Fig. 1. Corolla, cut open. Fig. 2. Calyx. Fig. 3. Section of a calyx, to shew the pistil within,—*more or less magnified*.

Scutellaria parvula

J. Swan. Sculpt.

SCUTELLARIA PARVULA.

Small American Skullcap.

DIDYNAMIA GYMNOSPERMIA.—NAT. ORD. *LABIATÆ.*

GEN. CHAR.—*Calyx* ore integro: post florescentiam clauso, operculato. *Corolla* tubus elongatus.—*Pers.*

Scutellaria *parvula;* glanduloso-pubescens, foliis ovatis integerrimis sessilibus conformibus, floribus axillaribus solitariis.

S. parvula, MICH. *Fl. Bor. Am.* v. ii. p. 11.—PURSH, *N. Am. Fl.* v. ii. p. 412.

Root, in my specimens, apparently annual, according to PURSH biennial, small, fibrous. *Plant* everywhere covered with short, glandular, pubescence. *Stem* erect, from 2 to 4 or 5 inches high, simple, or throwing out a few branches from its base, erect, four-sided, leafy. *Leaves* small, opposite, ovate, entire, the margins slightly recurved, the lowermost ones, or root leaves, shortly petiolate, the rest quite sessile, veined.

Flowers springing singly from the axils of the uppermost leaves, opposite, pale purplish-blue, placed on short footstalks. *Calyx* subcylindrical, green, tinged with purple, glandular, the back of the crest however glabrous, two-lipped, the *lips* entire: in a more advanced state, the crest becomes greatly enlarged, and forms a sort of helmet or lid to the top. *Corolla* glandular, with a longish tube, curved upward, and there enlarged, two-lipped; the upper lip very short, 3-lobed, the two lateral lobes small, minutely crenate, the intermediate one notched, as if for the reception of the two upper stamens; *lower lip* large, pendent, 3-lobed, the intermediate lobe the largest, all of them slightly crenate at the margin. *Stamens* white. *Anthers* 1-celled, slightly ciliated. *Germen* formed of four rounded, green lobes, placed upon the top of a pedicelliform receptacle, which has a large, glandular, yellow swelling at the base. *Style* scarcely so long as the flower. *Stigma* bifid.

The *Scutellaria parvula* was first discovered by MICHAUX in the territory of the Ilinois, North America: it grows also in Canada, and is described in the *Flora Borealis Americanæ.* Mr GOLDIE brought home dried specimens and seeds from the British settlements in Canada, and succeeded in

raising plants in the nursery at Monkswood Grove, Ayr. In cultivation, the *S. parvula* attains to twice the size of the individuals here represented, which are native specimens, and has also many branches springing from the base of the stem.

This species is doubtless very nearly allied, as MICHAUX remarks, to *S. minor* of our own country: in the latter plant, however, the leaves are more decidedly heart-shaped at the base, they have also a short petiole, and the whole herb is but slightly pubescent, never glandular; added to which, its flowers are of a very different figure, and their colour is a pale pink, spotted on the lower lip.

Fig. 1. Flower. Fig. 2. Advanced calyx, enclosing the almost fully formed fruit. Fig. 3. Portion of one of the stamens. Fig. 4. Pistil.—*All more or less magnified.*

Polybotrya viviparа

C. Lauer Sculpt Parisiis

POLYBOTRYA VIVIPARA.

Viviparous Polybotrya.

CRYPTOGAMIA FILICES.—Nat. Ord. *FILICES.*

Gen. Char.—*Capsulæ* sessiles globosi, in spicis nudis paniculatis aggregatæ. *Indusium* nullum.—*W.*

Polybotrya *vivipara*; frondibus simpliciter pinnatis.

P. vivipara, Hamilton's MSS.

Root rather large, knotted, producing many coarse and branched downy fibres. *Sterile frond* placed upon a long stipes, glabrous, or only with a few small brown scales near the base, simply pinnated; the pinnæ four or five inches long, lanceolate for the most part of their length, truncate at the base, sessile, standing out horizontally, duplicato-crenate at the margin, furnished in the centre with a strong midrib, and many minute dichotomous nerves branching off at nearly right angles from it, pale green. *Rachis* minutely scaly.

Fertile frond equally pinnatifid, the pinnæ filiform, about two or three inches long, filiform in the greater part of their extent, upon which are arranged numerous, subalternate, hemispherical, or almost globular clusters of naked capsules, (Fig. 1.) Each *capsule* in itself spherical, pedicellate, reticulated, brown, opening transversely irregularly, and dispersing numerous, roundish, minute *seeds*.

The genus *Polybotrya* is founded upon a South American Fern, discovered by Humboldt, and no other species of this singular and distinct genus seems to have been noticed by authors. My kind friend Dr Buchanan Hamilton of Leny House, author of "Travels in the Mysore Country, and through Nepaul," and who is now engaged in writing a commentary upon the *Hortus Malabaricus*, discovered, so long ago as the year 1808, the present individual, growing in woods at Gualpara, in the eastern parts of Camrupa, in the East Indies. Dr Hamilton has distinguished it, in his manuscript notes, by the specific name which I have retained to it. The specimens here

delineated being rather in an imperfect state, the viviparous character, from which the proper appellation is derived, does not appear in the plate.

From the *Polybotrya osmundacea* of Willdenow and Humboldt, published in the 1st volume, tab. 2. of the *Nova Genera et Species Plantarum* of the latter author, the present individual differs in its simply pinnate, not bipinnate fronds.

Fig. 1. Portion of a pinna, with clusters of capsules. Fig. 2. Single unopened capsule. Fig. 3. Single capsule, in the act of bursting.—*All more or less magnified.*

1

2

Acrostichum pendiculatum

ACROSTICHUM APPENDICULATUM.

Appendaged Acrostichum.

CRYPTOGAMIA FILICES.—NAT. ORD. *FILICES.*

GEN. CHAR.—*Capsulæ* sparsæ, discum totum inferiorem frondis, vel ejus partem occupantes. *Indusium* nullum.

Acrostichum *appendiculatum*; frondibus pinnatis, pinnis lanceolatis crenatis basi sursum auriculatis, fertilium pinnis ellipticis integerrimis, rachi alato.

A. appendiculatum? WILLD. *Sp. Pl.* v. 5. p. 114.

A. viviparum, HAMILTON's MSS.

Root creeping, scaly, throwing out downy fibres. *Fronds* from six or eight inches to three feet in height, the stipes of them being from four inches to a foot long, somewhat scaly, the rest is lanceolate, acuminate in its outline or circumscription, cut into numerous, simple, rather distantly placed pinnæ, which are in themselves lanceolate, two or three inches in length, subfalcate, obtuse at the extremity, and bluntly crenate at the margins, the base truncate, or somewhat wedge-shaped, auricled above; midrib not running through the centre, but nearer to the lower margin of the frond; the extremity somewhat caudate and bulbiferous; bulbs scaly, and becoming new plants. *Rachis* and upper part of the stipes winged.

Fertile fronds, in the individuals that have come under my observation, longer than the sterile ones, which arise from the same root; pinnated above with elliptical, very obtuse, entire pinnæ, much smaller than the sterile ones, and covered on the under side with the numerous, brown, naked *capsules*.

Found at Nabovi, in Eastern Camrupa, in 1801, by Dr BUCHANAN HAMILTON, who named it in his MS. *A. viviparum*, though fully aware, at the same time, of its affinity with the *A. appendiculatum* of WILLDENOW. The only points of difference, as noticed by the latter author, are, that *A. appendiculatum* is a smaller plant, and has the fertile pin-

næ subrotund; and he overlooks the winged rachis of the present species. Still, I am of opinion, that the same plant is intended by WILLDENOW.

From New Zealand, I have the fertile frond of an *Acrostichum*, which I cannot distinguish from this, given me by Mr LINDLEY.

Fig. 1. Portion of a fertile frond. Fig. 2. Single capsule.

Epidendrum? monophyllum

J. Swan Sculp.

EPIDENDRUM? MONOPHYLLUM.

One-leafed Epidendrum.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Div. *Anthera terminalis, mobilis, decidua. Massæ pollinis demum cereaceæ.*

Gen. Char.—*Columna* cum ungue labelli longitudinaliter connata in tubum (quandoque decurrentem ovarium). *Massæ pollinis* 4, parallelæ, septis completis persistentibus distinctæ, basi filo granulato elastico auctæ.—*Br.*

Epidendrum? *monophyllum;* caule unifolio, folio elliptico-lanceolato obtuso, racemo paucifloro e sinu folii, petalis conniventibus una cum labello lanceolatis, duobus interioribus minutis, columna superne alata dentata.

Root parasitic, consisting of a few short, simple, flexuose fibres. *Stems* two or three together, scarcely ever exceeding an inch in length, erect, slender, surmounted by a single elliptical, lanceolate, fleshy, pale green, obtuse *leaf,* which has a midrib, but is destitute of nerves.

From the base of the leaf proceeds the *flowerstalk,* bearing two small blossoms, each of which is surrounded at the base with a sheathing bractea. *Pedicel* short, rather swollen upwards, and there jointed, as it were, at the setting on of the germen. *Corolla* with the *petals* closed, or only very slightly separated; the three *outer ones* lanceolate, pale green, with a prominent central line, the two lowermost of these somewhat gibbous at the base, and there united. The two *innermost* and lateral *petals* are also lanceolate, but minute, whitish, with a red central line. *Lip* small, about equal in length to the inner petals, lanceolate, standing out parallel with the petals, and concealed by them; nearly plane, slightly serrated at the margin, near the base above having two indistinct tubercles; its colour deep purple. *Column* shorter than the inner petals, straight, semicylindrical at the base, above, at the base of the anther, expanding into a sort of hood, formed by the concave, broadly winged and toothed margin: the base running down towards the base of the lip, deep purple. *Anther* operculiform, placed in a hollow or recess in the broad upper part of the column, and immediately above a membranous process which covers the *stigma,* 2-celled; each cell having a *pollen-mass* composed of two pieces, yellow, waxy, united at their bases by a white glutinous gland. *Germen* very short, purple, tuberculated, not twisted?

Together with *Cymbidium? bituberculatum*, soon to be figured in this work, Mr SHEPHERD was so obliging as to send me from the Liverpool Garden the present highly curious little plant, introduced by Mr WILES from Jamaica, but of which I am equally at a loss as with the *Cymbidium* just mentioned, to ascertain accurately the genus. Indeed I have only reduced it to the genus *Epidendrum*, on account of its general affinity with *Epidendrum polybulbion* of SWARTZ, a plant, again, which cannot belong to the same genus as the *E. nutans* of this work, which latter may probably be considered as the true type of the genus *Epidendrum*.

Fig. 1. Plant, *natural size.* Fig. 2. Back view of a flower. Fig. 3. Under view of the same. Fig. 4. Side view of the same. Fig. 5. Flower deprived of its three outer petals. Fig. 6. Column and lip. Fig. 7. Front view of the column and of the two inner petals. Fig. 8. Upper part of the column; the anther having fallen away. Fig. 9. Anther. Fig. 10. Pollen-masses, removed from the same.—*All but* Fig. 1. *more or less magnified.*

Paullinia meliafolia

J. Fuan Lith.ª Liege

PAULLINIA MELIÆFOLIA.

Azederach-leaved Paullinia, DC.

OCTANDRIA MONOGYNIA.—NAT. ORD. *SAPINDACEÆ.*

GEN. CHAR.—*Calyx* pentaphyllus subinæqualis. *Petala* 4, intus appendiculata, quinti deficientis sede vacua. *Stamina* 8, subinæqualia. *Capsula* 3-locularis, trivalvis (abortione unilocularis). *Semina* arillo membranaceo semitecta.

Frutices scandentes, foliis compositis, DECAND.

Paullinia *meliæfolia;* capsulis rotundato-pyriformibus 3-alatis, alis parvis in stylum cohærentibus, foliis pinnatis tri-quadrijugis cum impari, foliolis sessilibus lanceolatis remote-dentatis, inferioribus ternatis, petiolo alato.

P. Meliæfolia, JUSS. *in Ann. du Mus.* v. iv. p. 347. t. 66. f. 2.—LAM. *Dict.* v. 5. p. 99.—DECAND. *Prodr. Syst. Veget.* p. 605.

A climbing plant, with long slender *stems* and *branches*, which are deeply furrowed. *Leaves* frequently near a foot in length, pinnated with 3 or 4 pairs of opposite, lanceolate, acuminated, sessile, distantly toothed or serrated, bright green pinnæ, glabrous above, very slightly pubescent beneath, terminated with an odd one. *Petioles* jointed at the setting-on of the leaflets, and winged. *Stipules* two at the base of each leaf, oblongo-subfalcate, pale green, slightly ciliated, soon becoming brown.

Raceme compound, having a pair of cirrhi at the base, and being placed on a long cirrhiform peduncle which arises from the axil of a leaf, long, pendent. *Pedicels* much branched, with a joint near the middle. *Flowers* greenish-white; many of them abortive. *Calyx* of 5 unequal leaflets; the two outermost opposite, small, equal, green, between them on one side is a single, and on the other side 2, obovate, larger, pale green equal leaflets. *Corolla* of four obovato-oblong, white, concave *petals*, with a vacant space as if for the reception of the fifth petal: this space is opposite the two latter calycine leaflets just mentioned. The *petals* are furnished within at their base, with a large subpetaliform concave scale, fringed at the margin, and crowned at the top with a bright yellow, subbifid gland. *Stamens* 8, unequal in height, and somewhat cohering at their base. *Filaments* thickish; *Anthers* oblong, 2-celled, pale yellowish-brown. *Pollen* triangular. On that side of the flower where is seen the single leaflet of the calyx are 4 small erect glands, at the base of the stamens, and opposite to two of the petals. *Pistil* slightly pedunculated. *Germen* globoso-

triangular, pale green, slightly hairy, tapering upwards into a short style with 3 *cells*, each containing a single *ovule*. *Stigmas* 3. *Fruit* growing in large, handsome clusters, yellow-green, deeply tinged with red. *Capsules* abounding in a milky juice, globoso-triangular, suddenly tapering at the base into a short stalk, and furnished with 3 obtuse wings, terminating above in the short persistent style, constantly 1-celled (two having become abortive and almost obliterated) with one large, ovate *seed*, half immersed in a pure white fleshy cup or arillus, which is fixed by its base to the bottom of the cell. *Albumen* none. *Embryo* occupying the whole cavity of the seed. *Cotyledons* unequal, *radicle* inferior.

Introduced from Brazil by RICHARDSON HARRISON, Esq. of Aegsburgh, and cultivated in great perfection, both in the stove of that gentleman and in that of the Liverpool Botanic Garden, whence the Messrs SHEPHERDS were kind enough to send me in the month of March very fine specimens both in flower and fruit. These have enabled me to give, as I trust, a tolerably satisfactory analysis of those parts. The capsules are decidedly 3-celled, and each cell has three ovules; two of which, in all the numerous capsules which I have examined, become by abortion 1-celled and 1-seeded.

With regard to the species, it accords in every respect with the description of *P. meliæfolia* of JUSSIEU in the *Annales du Muséum*, with the sole exception that it has as often *four* as *three* pairs of pinnæ to the leaves. No author but M. DE JUSSIEU appears to have been acquainted with the plant, and he did not know its inflorescence, and only described it from dried specimens gathered by COMMERSON in the Brazils.

Fig. 1. Unexpanded flowers of *P. meliæfolia* shewing the two small opposite leaflets of the calyx, and that side of the flower where is seen the larger single leaflet. Fig. 2. Opposite side of a flower-bud, shewing the two large lateral leaflets of the calyx (the two oval swellings immediately within the small calycine leaflets at Figs. 1. & 9. are the base of the petals made convex by the scale within). Fig. 3. View of a flower on that side where the petal is wanting. Fig. 4. Flower, deprived of its petals, shewing the 4 small glands at the base of the stamens. Fig. 5. Petal within its scale. Fig. 6. Stamens. Fig. 7. Pollen. Fig. 8. Pistil. Fig. 9. Section of the germen, shewing the 3 cells, each containing an ovule. Figs. 10. & 11. Capsules, *natural size.* Fig. 12. Transverse section of a capsule and seed. Fig. 13. Seed with its arillus. Fig. 14. Vertical section of a seed, with its arillus.—*All but* Figs. 10. & 11. *more or less magnified.*

Ficus nitida

J. Swan Sculp.

FICUS NITIDA.

Shining-leaved Fig.

POLYGAMIA DIŒCIA.—NAT. ORD. *URTICEÆ.*

GEN. CHAR.—*Receptaculum* commune subsphæricum, carnosum, connivens, flosculos numerosos distinctos occultans. MASC. *Cal.* 3-partitus. *Cor.* 0. *Stam.* 1–3. FŒM. *Cal.* 3–5 partibus. *Cor.* 0. *Pistillum* 1. *Semen* unicum.—*W.*

Ficus *nitida*; foliis obovato-ellipticis glabris, venulis anastomosantibus, fructibus geminatis sessilibus depresso-sphæricis.

F. nitida, THUNB. *Diss. de Fic.* n. 14. (*Willd.*)—WILLD. *Sp. Pl.* v. iv. p. 1145.—SM. *in Rees' Cycl.*—RHEEDE, *Hort. Malabar.* v. iii. p. 69. t. 55.

A *tree* much branched and covered with greyish wrinkled bark. *Leaves* numerous, 2 or 3 inches in length, obovato-elliptical, quite entire, obtuse, (rarely ending in a very short blunted acumen), coriaceous, dark green, glabrous and somewhat shining above, pale green beneath; there are several parallel nerves which meet at their extremities within the margin, and numerous smaller ones or veinlets branching off from them, and anastomosing, but so minute as to be scarcely discernible by the naked eye: *petiole* from half to three quarters of an inch long, grooved above.

The *receptacles* are produced in pairs from the axils of the leaves, and are at first covered with thin, concave, fleshy green scales, at length enlarging to about the size of a black currant, when the thin scales remain at the base. The fruit is sessile, globular, but depressed upon the top, where the small orifice is closed by three connivent scales, of a greenish-brown colour, slightly warted: within covered with numerous, small, membranaceous, pale rose-coloured scales, and numerous whitish florets, both male and female: these are pedicellated, and both have unquestionably a single perianth of 3 narrow, obovate, membranaceous leaflets. The *male floret* has a single stamen (never 3), of which the filament is short, the *anther* ovate, of 2 longitudinal cells; The *female floret* has one *pistil: germen* ovate, pedicellated; *style* filiform, lateral: *ovule* single, pendent.

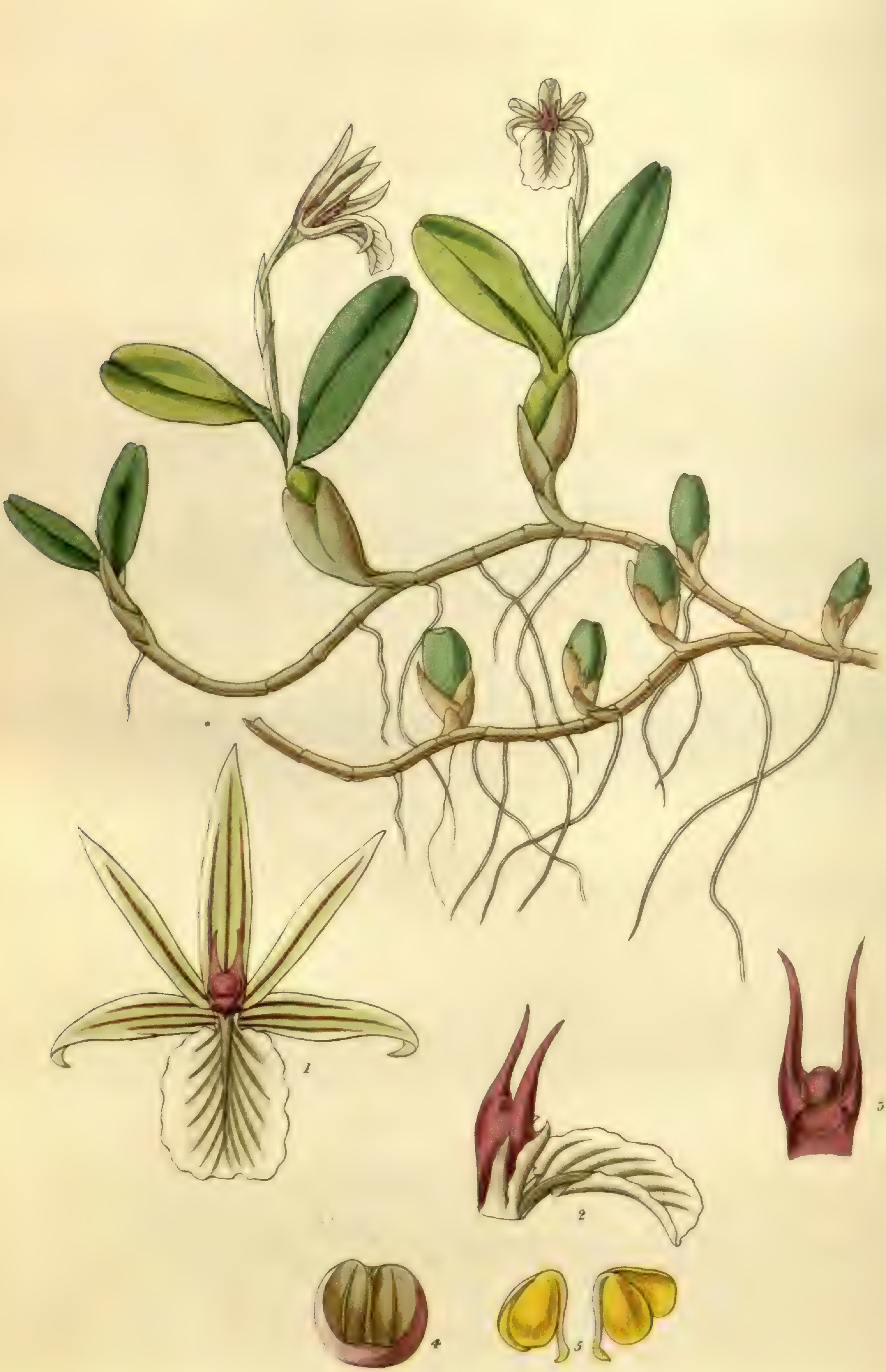
Received from Mr SHEPHERD under the name of *F. nitida*, and as having been sent to the Liverpool Botanic Garden from the West Indies. The *F. nitida* of THUNBERG, WILLDE-

NOW and SMITH, is, however, a native of the East Indies, and is described as having its leaves shortly and obtusely acuminated, with numerous and very delicate parallel nerves, characters which do not well correspond with the specimen sent to me. In other respects, the plants sufficiently agree; nor is the figure in the *Hortus Malabaricus*, referred to by WILLDENOW and SMITH, at all unlike the present individual.

If I am correct in supposing the two plants to be the same species, Malabar is its native country, according to RHEEDE, who states that it there becomes a tree of enormous size, sending down its roots from the lofty branches, and affording shade and shelter to the Indians. Various medical properties are likewise attributed to it.

It flowers in the stove during the winter and spring.

Fig. 1. Young receptacles, covered with their scales. Fig. 2. Single young receptacle, from which the scales (Fig. 3.) have been removed. Figs. 4. & 5. Fruits. Fig. 6. Vertical section of a fruit. Fig. 7. Scales from the inside of the receptacle and floret. Fig. 8. Germen cut open to shew the ovule. Fig. 9. Portion of a leaf, to shew the ramification of the nerves.—*All more or less magnified.*



Epidendrum? polybulbon

J. Swan Sculpt.

EPIDENDRUM? POLYBULBON.

Bulb-bearing Epidendrum.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Gen. Char.—*Columna* cum ungue labelli longitudinaliter connata in tubum (quandoque decurrentem ovarium). *Massæ pollinis* quatuor, parallelæ, septis completis persistentibus distinctæ, basi filo granulato elastico auctæ.—*Br.*

Epidendrum *polybulbum;* caule repente bulbifero, bulbis diphyllis unifloris, flore pedunculato, lamina labelli cordata.—*Sw.*

E. polybulbon, Sw. *Fl. Ind. Occ.* p. 1491.

Stem parasitic, long, filiform, creeping, jointed, branched, throwing out long, white, simple fibres from the joints. *Joints* covered with brown, sheathing scales. At every third joint there arises, constantly according to Swartz, an oblong, compressed, green, fleshy *bulb,* tapering at the base into a sort of footstalk, and partly clothed with membranaceous scales, terminating above in two oblong, green, somewhat succulent, emarginate *leaves,* having a central rib, which is prominent on the under side.

Peduncle solitary from between the leaves, and scarcely longer than they are, erect, inclined at the extremity, jointed and clothed with sheathing scales, terminated by a single flower.

Calyx erecto-patent, of five linear, lanceolate, pale yellow-green leaflets, the three outermost of these with three faint reddish lines, the two innermost rather the narrowest, and with only one red line.

Labellum scarcely larger than the petals, white, nearly plane, orbiculato-cordate, waved at the margin, emarginate at the extremity, the base unguiculate, having the lower part of the claw united with the base of the column, and decurrent for a little way with the base of the germen. *Column* short, semicylindrical, with two teeth-like processes at the margin, and two horn-like acuminated processes at the extremity, deep purple, its margins white. *Anther* terminal between the horns, operculate, purple, 2-celled, cells with a partition. Each cell contains two obovato-hemispherical compressed *pollen-masses,* each pair of which terminates in a tail-like appendage, which is applied to the edge t he masses (in the same mode as the radicle of the embryos of many cruciform plants is applied to the edge of the cotyledons), with a gland at the extremity.

Introduced from Jamaica by CHARLES HORSFALL, Esq. of Everton, near Liverpool, and presented by that gentleman to the Liverpool Botanic Garden, where it flowered in December 1822.

SWARTZ describes this delicate little plant as inhabiting the high mountains of Jamaica, attached to the trunks of trees; and Mr WILES informs Mr SHEPHERD that it presents there a beautiful appearance, when it is seen growing in large quantities, flowering abundantly, and creeping among the moss at the roots of trees.

Unlike the *Epidendrum nutans* figured in this work, whatever portion of the labellum is connate with the column, is so only at its very base.

Fig. 1. Flower, with its petals spread open. Fig. 2. Column and lip. Fig. 3. Column, front view. Fig. 4. Anther-case. Fig. 5. Pollen-masses.

Xanthia pallidiflora

F. Fuhrmann Sculp.

IANTHA PALLIDIFLORA.

Pale-flowered Iantha.

GYNANDRIA MONANDRIA.—NAT. ORD. *ORCHIDEÆ.*

GEN. CHAR.—*Petala* minuta, conniventia, subæqualia, libera, inferne una cum labello magno dilatato inarticulato, breviter obtuse calcarato. *Anthera* operculiformis, libera. *Massæ pollinis* duo, dorso lobulato pedicello glanduloso affixæ.

Iantha *pallidiflora.*

Stem none. *Leaves* binate, linear-lanceolate, four or five inches long, glabrous and nerveless. *Scape* arising from between these leaves, in the present individual about half a foot high, and simple; but evidently, as may be seen from the vestiges of the old scapes which had blossomed in their native country, sometimes attaining a much greater height, and branched; cylindrical, glabrous, jointed, with scales at the joints, having small bracteas at the base of each flower.

Flowers lax and distantly placed. *Petals* very small, connivent and standing forward, so as to conceal the column of fructification, the three outermost smallest and equal in size, the two innermost larger and broader, all of them white with purple stripes; united together with the labellum at the base, so as to form a short, obtusely 2-lobed spur. *Lip* very large, pendent, nearly plane, 2-lobed, at the base furnished with two yellow tubercles, the rest of it white, with faint purplish streaks, its margin wâved. *Germen* slender, pedicelliform, twisted. *Column* very short. *Stigma* concave, green. *Anther* hemispherical, yellowish, with two purplish spots, operculiform, free. *Pollen-masses* two, yellow, coriaceous, each with a small lobe behind, and fixed to a linear, oblong, white footstalk, which has at its base an oblong gland; this gland projects beyond the operculum, where that is fixed upon the column.

The subject of the accompanying plate seems to be too interesting for me to neglect this opportunity of figuring it, although, as far as can be conjectured from some old scapes which remain on the plant, another season might have afforded much finer flowering stems. The individual from which the drawing

was made, came from Trinidad, whence it was sent by our liberal friend Baron DE SCHACK, M. D. and flowered in the stove of the Glasgow Botanic Garden in the month of November. It belongs to Mr BROWN's Section IV. in Hort. Kew.; but I can find no genus to which it may be satisfactorily referred. The similarity of the flowers, as to their general effect, with those of some species of Violets, have suggested to me the appellation of *Iantha*.

Fig. 1. Single flower. Fig. 2. Lip and spur. Fig. 3. Spur and column of fructification. Fig. 4. Column from which the anther-case is removed, shewing the pollen-mass.

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2

T. Swan Sculpt Glasgow

Polypodium plantagineum

POLYPODIUM PLANTAGINEUM.

Plantain-leaved Polypodium.

CRYPTOGAMIA FILICES.—NAT. ORD. *FILICES.*

GEN. CHAR.—*Sori* subrotundi, sparsi. *Indusia* nulla.

Polypodium *plantagineum*; frondibus late lanceolato-oblongis glabris obtusiusculis apice emarginatis proliferis, soris biserialibus.

α, Stipite rachique subtus paleacis.

Lingua cervina latifolia, pedunculis squamosis, PLUM. *Fil.* t. 128.

β, Polypodium plantagineum, JACQ. *Coll.* v. ii. p. 104. t. 3. f. 1.—SWARTZ, *Syn. Fil.* p. 29.—WILLD. *Sp. Pl.* v. 5. p. 161.

Caudex, according to PLUMIER, creeping, knotty, but destitute of chaff-like scales, and emitting from below several branching radicles. *Stipes* from 4 to 6 or 8 inches in length, brown, with numerous chaff-like scales. *Frond* from 6 inches to a foot long, broadly lanceolato-oblong, sometimes approaching to obovato-oblong, the margin waved, entire, the base acute or slightly attenuated, the apex subacuminated, obtuse, and emarginate, in some instances bearing a scaly bulb or gemma, or throwing out a new plant, which taking root soon attains as great a size as the parent individual. *Midrib* chaffy on the underside (which, as well as the stipes in the var. β, is destitute of scales); lateral veins rather distant, parallel, nearly horizontal, waved; from these, almost at right angles, spring in a curved direction, other lesser veins or veinlets, which again branch out and anastomose so minutely as scarcely to be visible to the naked eye. *Texture* of the frond thin, and almost membranaceous.

Between these curved second veinlets are placed the *spots of fructification*, two or four between each pair, and in two rows at pretty equal distances from and between each pair of primary veins. *Clusters* small, composed of several pedicellated *capsules*.

A native of Martinique, according to JACQUIN and PLUMIER; for there is no difference between the plants mentioned by the two authors, except that the one has the stipes and under side of the midrib chaffy, and the other has not.

The Reverend LANSDOWN GUILDING sent me some excellent specimens from the Island of St Vincent's, where they grow upon the ground in moist and shady situations, and always either bearing offspring at the extremity of the frond, or having within the notch at the point a scaly bulb, which encloses the gemma.

Accurately as this fern is figured and described both by PLUMIER and WILLDENOW, it is singular that neither of them should have spoken of this remarkable property; both, however, have figured the notch at the extremity, and the former author has not omitted to represent the scaly bud within it.

The plant becomes of a dingy blackish-green when dried.

Fig. 1. Portion of the frond, to shew the reticulations, and the situation of the sori. Fig. 2. Portion of a cluster of capsules and seeds.—*All more or less magnified.*

Plantago media

PRESCOTIA PLANTAGINIFOLIA.

Plantain-leaved Prescotia.

GYNANDRIA MONOGYNIA.—Nat. Ord. *ORCHIDEÆ.*

Sect. II. Anthera *stigmati parallela persistens.* Massæ pollinis *vel farinaceæ vel e corpusculis angulatis; apicibus stigmati affixæ.*—Br. Prodr.

Gen. Char.—*Perianthium* rectum (resupinatum auctorum). *Laciniæ* revolutæ, duæ superiores basi connatæ: *Labellum* erectum, carnosum, cucullatum, integerrimum, columnam minutissimam amplectens. *Anthera* bilocularis persistens, stigmati parallela: *Pollinia* 2, didyma, granulosa, apice glandula gynizo retuso affixa.—*Lindl.* MSS.

Prescotia *plantaginifolia*, Lindl. *Hist. Orchid. ined.*

Stem about a foot and a half in height, cylindrical, somewhat furrowed upwards, glabrous. *Leaves* several, the lower ones largest, 5 or 6 inches in length, erecto-patent, broadly oblong or ovato-lanceolate, bluish-green, scarcely striated, rather thick, sheathing at the base; as they ascend the stem the leaves become gradually smaller and squamiform, or bracteiform, closely appressed. *Spike* 4–6 or 8 inches long, consisting of very many close, small, green, erect, appressed and resupinate flowers, each subtended by a lanceolate *bractea*, about half the length of the germen. *Rachis* stout, green, glabrous, furrowed downward from each side of the flowers.

Corolla with the five segments small, slightly concave, green, of which the two at the back of the flower are united at the base, and somewhat gibbous; the two inner ones nearly equal in length to the outer, but narrower, pale, and of a more delicate texture. *Lip* resupinate, erect, remarkably cucullate, with a small vertical opening, its texture thick and succulent, and of a darker green than the rest of the flower. *Germen* oblongo-clavate, erect, not in the least twisted, scarcely furrowed. *Column* very short, white. *Anther* placed at the back of the stigma, and parallel with it, fixed by its base, moveable, subcordate, yellow, obtuse, 2-celled. *Stigma* subquadrate, forming a sort of lip, which is rather shorter than the anther, notched, the notch applied near the top of the cells of the *anther*, and there receiving the gland of the *pollen-masses*, which, after the bursting of the anther, are left upon the inside of the *stigma*. They are composed of four, club-shaped, yellow, granulose bodies, united by their bases in pairs to a gland.

Communicated from the splendid garden of the Horticultural Society of London, by the liberality of its enlightened

Directors *. To that institution it was sent, with many other rare plants, from Rio Janeiro, in the autumn of 1822, by Mr JOHN FORBES, a most meritorious collector to the Society, who afterwards proceeded upon a mission into the interior of Africa, where he died as he was proceeding up the Zambezi river, in the 25th year of his age, to the irreparable loss of science, and to the great grief of his employers.

This plant struck me as bearing so much similarity in its parts of fructification to those of our *Malaxis paludosa*, that I should have been induced to refer it to that genus, if my valued and able friend Mr LINDLEY had not expressed himself of a different opinion; and as that gentleman has devoted much attention to the Orchideous plants, with a view to publishing a History of that tribe, his ideas are entitled to the highest respect.

The following remarks were kindly communicated to me by Mr LINDLEY, along with his generic character of *Prescotia*. "Strongly resembling this plant in habit, especially in its minute green flowers, is a singular individual, of which I possess specimens from Mexico, and which is still more nearly related to *Malaxis*, as it agrees with that genus in its sectional character. I call it

PEDILEA, (from *πεδίλον, a shoe*). *Perianthum* rectum (resupinatum *auctorum*). *Laciniæ* ovatæ; duæ labello supositæ, cæteræ (quorum interiores lineares) dependentes. *Labellum* erectum, ovatum, calciforme, integerrimum, apertum. *Columna* quadrata, minutissima. *Anthera* terminalis, opercularis, decidua, bilocularis. *Pollinia* bina, cereacea. *Gyniza* porrectus, subquadratus, tridentatus.

"I have given the name PRESCOTIA after our friend JOHN PRESCOT, Esq. of St Petersburg, who is known no less by his acquaintance with the more minute departments of botany, than by the facilities which he affords to communication between men of science in this country and in Russia."

Fig. 1. Flower of *Prescotia plantaginifolia*, with the corolla in the act of opening, and exposing a part of the lip. Fig. 2. Flower, fully expanded. Fig. 3. Back view of a flower. Fig. 4. Back view of the column of fructification; *a*, The anther; *b*, The stigma. Fig 5. Front view of the column; *a*, The anther; *b*, The stigma. Fig. 6. Front view of a column, with the stigma bent down and the anther forced up, to shew its mode of insertion; the anther still containing the pollen-masses. Fig. 7. Front view of a column, of which the stigma bears the pollen-masses that have fallen from the cells of the anthers. Fig. 8. Pollen-masses.—*All more or less magnified.*

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* I am desirous of here publicly acknowledging the extensive and valuable addition to the collection of living plants which our Glasgow Botanic Garden has recently obtained from this institution.

Cymbidium? tuberculatum

CYMBIDIUM? BITUBERCULATUM.

Bitubercled Cymbidium.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Div. *Anthera terminalis, mobilis, decidua. Massæ pollinis demum cereaceæ.*—Br.

Gen. Char.—*Labellum* ecalcaratum, concavum, cum basi (simplici nec producta) columnæ articulatum. *Petala* patentia, distincta. *Massæ pollinis* duo, postice bilobæ.—*Br.*

Cymbidium? *bituberculatum;* subbulbosum, foliis quaternis ovatis plicato-striatis undulatis, labello reflexo, basi tuberculato, corollæ laciniis duobus interioribus angustioribus.

Parasitic?

Stems about five or six inches in height, erect, considerably swollen and jointed; joints two or three inches long, cylindrical, of a dark hue, pellucid and green, in this respect, as Mr H. Shepherd remarks, resembling the stems of a *Balsam* or *Tradescantia;* each joint has a large sheathing scale, acuminated at the point. These old stems remain after flowering, and form linear, oblong, leafy bulbs, often tinged with red. From the summit of the stem rise four *leaves,* placed close together, each about four inches in length, ovate, erecto-patent, of a thin membranaceous texture, and of a bright yellow-green colour, strongly nerved and plaited, the margin waved.

The *flower-stalk,* about eight inches long, springs from the centre of the leaves, it is erect, leafless, remarkably angular, the angles almost winged, of a purple colour below, above paler, almost white.

Flowers forming a loose, elongated spike, with very small, lanceolate, purple bracteas. *Corolla* very patent: the *three outer petals* oblongo-lanceolate, their margins revolute, the upper one rather the longest and narrowest, purple green: the *two inner* petals linear, their margins revolute, purple. The *Lip* has its sides curved upward, the extremity reflexed, with two tubercles at the base; of a deep purple colour, greenish at the margin. *Column* whitish, quite exposed, semicylindrical, incurved, the upper part slightly winged on each side of the stigma. *Anther* operculiform, 2-celled, and covering four ovate, deep yellow, waxy *pollen-masses,* which are placed in pairs. *Germen* elongate, whitish, twisted.

A spike and a leaf of this remarkable and rare orchideous plant were most liberally communicated to me in the month of February, from the only individual specimen in the Liverpool Botanic Garden, by my often mentioned friend Mr SHEPHERD, who sent me at the same time a sketch of the whole plant.

To Mr SHEPHERD, the *Cymbidium bituberculatum* was given by Mr Jos. COOPER, Botanic Gardener to Lord MILTON at Wentworth House, Yorkshire, who received it from Nepaul, of which country it is a native, at the hands of Dr CAREY, and who has thus the honour of introducing it to our gardens. It flowered with Mr COOPER, for the first time, during the summer of last year.

I am quite aware that there exist, both in its habit and in the character of its fructification, sufficient grounds for making of this plant a distinct genus from *Cymbidium;* yet, without a more intimate acquaintance with the exotic *Orchideæ* than I have the happiness to possess, I prefer allowing it to remain as one of an old established family, to incurring the risk of burdening this already complex department of the system with incorrectly-defined genera.

Fig. 1. Side view of a flower. Fig. 2. Front view of the same. Fig. 3. Lip. Fig. 4. Column. Fig. 5. Anther-case. Fig. 6. Pollen-masses. Fig. 7. Two of the pollen-masses separated.—*All more or less magnified.*

Aspidium nodosum

J. Swan. Lith.

ASPIDIUM NODOSUM.

Knotty-stalked Shield-Fern.

CRYPTOGAMIA FILICES.—NAT. ORD. *FILICES.*

GEN. CHAR.—*Sori* subrotundi, sparsi. *Indusium* umbilicatum vel uno latere dehiscens.

Aspidium *nodosum*; frondibus simplicibus oblongo-lanceolatis acuminatis marginatis basi acutis, soris interrupte lineatim dispositis, stipite articulato glabro, caudice repente paleaceo hirsuto.

A. nodosum, WILLD. *Sp. Pl.* v. 5. p. 211.
A. articulatum, SCHKUHR, *Fil.* p. 28. t. 27. (fig. ex *Plum.*)
Lingua cervina, pellucida, pedicellis articulatis, PLUM. *Fil.* p. 118. t. 136.

Caudex long, creeping, flexuose, thicker than a goose-quill, covered with numerous brown, slender, chaffy scales, and throwing up from its superior surface a great number of extremely handsome oblongo-lanceolate, bright delicate green, shining, submembranaceous *fronds*, from 8 inches to a foot in length, suddenly acuminated at the extremity, acute at the base, the margins every where entire, thickened and waxy: the midrib is slender and glabrous, pale brown, emitting through the substance of the fronds very numerous, closely placed, parallel horizontal nerves, most of them simple, some of them forked near the base. This *frond* is placed upon a stipes, 2 or 3 inches long, cylindrical, glabrous, dark brown, jointed at about the distance of $\frac{3}{4}$ths of an inch from the base, and swelling at the joint.

Fructification: *Sori* roundish, arising from the lateral parallel nerves on the back of the frond, and disposed in interrupted, flexuose, longitudinal lines, mixed with others that are scattered indiscriminately. *Involucre* an orbicular brown scale, darkest in the middle, where, by the under side, it is fixed to the frond: its margins at length turning up by the enlargement of the capsules beneath. These *capsules* are spherical, pedicellate, furnished with an incomplete elastic ring.

This truly beautiful and curious fern is one of those which I mentioned under the description of my *Aspidium Wallichii*, as having an articulated stipes to the frond, of which three species are described by WILLDENOW; and until the indivi-

dual just alluded to was discovered, all the known *Aspidia* " frondibus simplicibus" possessed this remarkable character.

PLUMIER first described and figured the *Aspidium nodosum* from plants that he discovered on the trunks of fallen trees in the Island of Martinique, and he seems to have been much struck with its beauty. " La racine pousse" (says he) " en toute sa longueur des feuilles à pédicules noirs, et d'une membrane très ferme, d'un vert foncé, si unie et si polie, que vous prendriez les feuilles pour des pieces de satin, bordées d'un galon blanc, et toutes traversées par des lignes parallèles, droites, et tirées à angles droits sur la principale nervûre." SCHKUHR only knew the plant from PLUMIER's figure; and the author of LAMARCK's Encyclopædia, as well as SWARTZ, appear never to have seen specimens, as they have confounded it with their *A. articulatum*, a native of the Isle of France, which has never yet been delineated, and which is distinguished from the present individual by its chaffy stipes and scattered fructification.

For the possession of this plant in my Herbarium, I am indebted to the Reverend LANSDOWN GUILDING, who finds the species in the Island of St Vincent's.

Fig. 1. Portion of the frond. Fig. 2. Cluster of capsules with its involucre. Fig. 3. Single capsule. Fig. 4. Seeds.—*All more or less magnified.*

Primula Palinuri

T. Curtis Lith.

J. Swan Sculpt.

PRIMULA Palinuri.

Palinurian Primrose.

PENTANDRIA MONOGYNIA.—Nat. Ord. *PRIMULACEÆ.*

Gen. Char.—*Cal.* 5-dentatus. *Cor.* hypocrateriformis, tubo cylindraceo, ore nudo. *Stigma* capitatum. *Capsula* unilocularis, decemdentata.

Primula *Palinuri;* foliis obovato-spathulatis obtusis dentato-crenatis glabris, scapo laterali foliis longiore, umbella nutante, involucri foliolis inæqualibus maximis.—*Lehm.*

Primula Palinuri, Jacq. *Eclog.* p. 63. t. 43.—Tenore, *Fl. Neapolitana,* t. 14.—Lehm. *Prim.* p. 43.

Root large, thick, the upper part (which, indeed, may almost be considered a *stem*) appearing considerably above the ground, brown, scarred transversely, where the old leaves have fallen away; frequently throwing out offsets. *Leaves* all springing from the top of the root, about four inches long, by two and a half broad, obovato-spathulate, slightly waved, spreading, recurved at the extremity, obscurely veined, fleshy, entire below, toothed, or repando-dentate upwards, naked (not mealy), but slightly viscid. *Scape* longer than the leaves, glabrous, viscid. *Bracteæ* numerous, ovato-lanceolate, concave, waved; the outermost large, diminishing gradually towards the centre, mealy.

Umbel simple, very mealy, and almost white. *Peduncles* about as long as the tube of the corolla. *Calyx* one-half as long as the tube of the corolla, bluntly five-toothed. *Corolla* yellow, almost scentless. *Tube* somewhat prismatic upwards, straight. *Limb* suberect, more than half the length of the tube; segments notched at the extremity; the margins involute. *Faux* orange-coloured, open, mealy, destitute of teeth. *Stamens* inserted near the middle of the tube. *Filaments* very short. *Anthers* oblong. *Pollen* globular. *Germen* globular, green. *Style* filiform, as long as the tube. *Stigma* capitate, glandular.

Primula Palinuri is a plant of recent introduction to our gardens, and a native of rocks at Palinuri, near Salerno, in the Neapolitan dominions. It is most nearly allied to *Primula auricula*; but differs in many essential points. Lehmann

Dendrobium Barringtonia

DENDROBIUM Barringtoniæ.

Large-leaved Dendrobium.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Gen. Char.—*Labellum* ecalcaratum, articulatum cum apice processus unguiformis, cujus lateribus petala antica adnata, calcar æmulantia. *Massæ pollinis* 4, parallelæ.—*Br.*

Dendrobium *Barringtoniæ;* bulbo ovato compresso-tetragono, foliis subternis ovato-lanceolatis plicatis striatis, scapo radicali solitario unifloro.

D. Barringtoniæ, Sw. *Gen. et Sp. Orchid.* p. 94.—Smith, *in Rees' Cycl.*—Br. *in Hort. Kew.* ed. 2. v. 5. p. 213.

Epidendrum Barringtoniæ, " Sm. *Ic. Pictæ,* t. 15."

Roots several, cylindrical, waved, fleshy fibres, springing from the lower part of the bulb. *Bulb* three inches or more in height, and nearly as much in diameter, compressed, but four-sided, each side having a slightly prominent line down its centre. From the summit of the bulb spring, in this specimen, three ovato-lanceolate *leaves,* nearly a foot in length, tapering at the base, acute at the extremity, waved at the margins, the surface many-nerved and plicate, the colour rather a dingy green, paler beneath. At the base of the bulb, and from among the roots, arises a single *scape,* scarcely longer than the bulb, cylindrical, green, sheathed, with large, ovate, involute and striated, brown scales, 1-flowered. *Flower* large: *Petals* spreading, ovato-lanceolate, very obscurely striated, the three upper ones the smallest, the two larger uniting and running down at their base behind, into a large obtuse subdidymous spur, divided almost down to the base in front: all are of a rather deep yellow-green colour, tinged with brown at the extremity. *Lip* oblong, an inch and a half or more in length, but shorter than the petals, erecto-patent, almost pressed to the column, and articulated to it at the base, white at the lower half, the upper orange-flesh-coloured, three-lobed, the two side lobes small, incurved, the central one large, fleshy, subconcave, fringed at the margin: there are also two elevated fleshy lobes, occupying the lower half, decurrent with it, striated. *Column* long, white, uniting the bases of the petals, and running down into the spur, the upper part free, slightly curved. *Anther* operculiform, whitish, slightly attached behind to the back of the column, 2-celled. *Pollen-masses* two, one of them was wanting in the present instance, and

the other, perhaps not perfect, was ovate, and appeared deeply cleft, almost to the base, into two lobes, yellow: *Stigma* concave, placed just below the anther. *Germen* almost cylindrical, sulcated, curved at the top.

A native of trunks of trees in Jamaica, and first made known to the scientific world by Sir J. E. SMITH in his *Icones Pictæ*, from a plant which blossomed in the garden of the Honourable Mrs BARRINGTON at Mongewell, where it flowered in 1791. During the next year, the same species bloomed at Chelsea. But it seems to be rare in our gardens, and no figure of it has ever appeared in any of our more popular botanical publications.

The plant from which the present drawing was taken, was imported from Jamaica by Messrs SHEPHERD five or six years ago, and flowered in the stove of the Botanic Garden at Liverpool in April 1824. It is obviously allied to the *Dendrobium Harrisoniæ* of this work, although differing from it in many important points.

Not having the opportunity of referring to SMITH's *Icones Pictæ*, I rely upon my friend Mr H. SHEPHERD, for the observation that it agrees with the figure there referred to, in almost every respect, except that the bulb is not in that represented as quadrangular, as it really is in the present species, and the lip is more coloured.

Fig. 1. Front view of a flower, *natural size*. Fig. 2. Lip. Fig. 3. Column and lower portions of the petals. Fig. 4. Upper part of the column, with the anther thrown back, to shew its inside. Fig. 5. Pollen-mass.—*All more or less magnified.*

Dendrobium Harrisonii

Mrs Lawson del. *C. Lowe lith.*

DENDROBIUM HARRISONIÆ.

Mrs Harrison's Dendrobium.

GYNANDRIA MONANDRIA.—NAT. ORD. *ORCHIDEÆ.*

GEN. CHAR.—*Labellum* ecalcaratum, articulatum cum apice processus unguiformis, cujus lateribus petala antica adnata, calcar æmulantia. *Massæ pollinis* 4, parallelæ.—*Br.*

Dendrobium *Harrisoniæ*; bulbo ovato unifolio, folio ovato-lanceolato undulato basi attenuato, scapo unifloro, petalis duobus inferioribus dorso unitis, apice bidentatis.

Parasitical: Bulb ovate, about as large as a pigeon's egg; faintly striated and partly covered by a reticulated membrane, and bearing at the extremity a single broadly lanceolate, waved, recurved, striated *leaf*, about 6 or 8 inches in length, tapering at the base.

From the base of this bulb arises a single scape, 4 or 5 inches in length, cylindrical, jointed, and at each joint bearing a sheathing membranous brownish scale or bractea; at the extremity having a single, large, upright flower, and the rudiment of a second. The three outer segments of the corolla are spreading, the upper one oblong, the two lower ones united for their whole length at the back, and tapering down into a sharpish point, which embraces the lower part of the corolla with its involute margins, and is bifid at the extremity. The colour of the three outer petals is yellow-brown, tinged more deeply at the extremity, the two inner petals are rather smaller than the outer, yellowish; all of them rather thick and fleshy. The *Lip* is large, standing erect, and parallel with the column, narrow at the base, and yellowish, broad upwards, cut into three large lobes, beautifully marked with red veins and pubescence; of these, the two lateral lobes are incurved, the extreme one much undulated and recurved. Within, the lip is wholly striated with red lines, except in the middle, where is a large, yellowish gland. *Column* long, adnate for nearly its whole length, and uniting together the base of all the petals. *Anther* operculiform, 2-celled. *Pollen-masses* in two pairs, united together at the base; each of them is plano-hemispherical, and yellow. *Germen* clavato-cylindrical, very long, green.

Specimens of this beautiful plant were kindly forwarded to me, in April last, by Mr HENRY SHEPHERD, from the collection of Mrs ARNOLD HARRISON of Aegsburgh, near Liverpool, along with an excellent drawing by the same lady. Mrs HARRISON received it two years ago from her brother at Rio de Janeiro; and the species appearing to me entirely new, I cannot do better than honour it with the name of an individual who has not only introduced this, but many other new and rare plants to our gardens, and who cultivates them with great success.

Many important points divide this species from *D. Barringtoniæ*, to which it bears a considerable resemblance.

Fig. 1. Side view of a flower, *slightly magnified*. Fig. 2. Column and lip (the latter foreshortened), together with the base of the petals. Fig. 3. Pollen-masses.—*All more or less magnified.*

Braya alpina

J. Swan Sculpt.

BRAYA ALPINA.

Alpine Braya.

TETRADYNAMIA SILIQUOSA.—NAT. ORD. *CRUCIFERÆ.*

GEN. CHAR.—*Siliqua* lineari-oblonga, subcylindracea. *Stylus* brevis. *Semina* biserialia. *Cotyledones* incumbentes. *Dissepimentum* medio fissum.

Braya *alpina*; foliis spathulatis subintegerrimis glabris, caule folioso pubescente, racemo fructifero brevi.

Braya alpina, STERNBERG and HOPPE, *Diss. cum Icon. ex Goett. an Zieg. Jan.* 1817, p. 155.—DE CAND. *Regn. Veget. Syst. Nat.* v. ii. p. 211.—DE LESS. *Ic. Sel.* v. ii. t. 22. (an excellent representation).—DE CAND. *Prodr.* v. i. p. 141.

Root long, subfusiform, perennial, descending deep into the ground, and throwing out many small lateral fibres, at the upper extremity dividing into as many heads as there are stems. *Stems* slightly pubescent, from 2 to 3 or 4 inches in height, increasing considerably, however, as the fructification advances. *Leaves* rather numerous, crowded near the root, more scattered upon the stem, lanceolate, tapering below into a short footstalk in the upper individuals, into a long one in those springing from the root.

Flowers in a small capitate corymb, of a pale pink or rose colour, sometimes nearly white. *Pedicels* short, glabrous, scarcely swelling upwards. *Calyx* of 4 ovate, obtuse, concave, erect, glabrous, green leaflets, purple at the margin. *Petals* broadly ovate, clawed, waved, patent, with an obtuse sinus at the extremity. *Stamens* 6; tetradidynamous; the two shorter ones inserted upon a gland a little below the 4 taller ones. *Anther* broadly ovate, yellow. *Pollen* globular. *Pistil: Germen* cylindrical, hispid upon the valves, the hairs stellate, with 2 or 3 rays. *Style* short, and, as well as the margins of the dissepiment, glabrous. *Stigma* capitate, 2-lobed, glandular.

Siliqua rather short, somewhat more than half an inch long, cylindrical, turgid, with two cells, opening with two hispid valves, and containing in each cell about 6 seeds, affixed to each side of the margin. *Dissepiment* with a central, vertical fissure, which exists in the state of the germen; but the edges of the fissure then lap over each other in a slight degree. *Seedstalk* short, curved. *Seeds* roundish, slightly compressed, punctato-striated, brown. *Embryo* with the radicle curved up against the back of one of the cotyledons.

This extremely rare plant has been introduced to our gardens very recently from Germany, and in the spring of the present year has produced flowers, both in our own garden and in that of Edinburgh. These individuals, however, being dwarfish, and considerably smaller than the wild specimens which I have received through my kind friend Dr HORNSCHUCH, I have represented the figure of the natural size, from one in my herbarium, and the parts of fructification from garden plants.

Its native country is the Alps of Carinthia and Salzburg, where it has been found by Messrs STERNBERG and HOPPE. By them the genus *Braya* was established, in a work to which, unfortunately, I have at this time no access. DE CANDOLLE was not acquainted with the perfect seeds: hence he has, in his *Systema Vegetabilium*, referred this genus to a division having the cotyledons accumbent. This character alone, suffices to remove *Braya* from *Arabis*, as also from Mr BROWN's *Parraya*, while from *Platypetalum* it may be known by its longer, linear seedvessel, and from *Eutrema* by the cylindrical, not ancipitate, siliqua. Two other species are known to us, the *B. glabrella* of RICHARDSON, and the *B. arctica*, which I first established in the yet unedited Appendix to Captain PARRY's second voyage.

Fig. 1. Flower. Fig. 2. Flower from which the petals are removed. Fig. 3. Petal. Fig. 4. Stamen and pistil. Fig. 5. Anther. Fig. 6. Pollen. Figs. 7. and 8. Pistils. Fig. 9. Capsule (*nat. size.*) Fig. 10. Capsule bursting. Fig. 11. Capsule, with one valve removed, to shew the arrangement of the seeds. Fig. 12. Portion of a capsule, to shew the fissure in the dissepiment. Fig. 13. Hairs of the valves of the capsule. Fig. 14. Side view of the Embryo. Fig. 15. Front view of the embryo. *All but* Fig. 9. *more or less magnified.*

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Pothos auriculis

POTHOS ACAULIS.

Stemless Pothos.

TETRANDRIA MONOGYNIA.—NAT. ORD. *AROIDEÆ.*

GEN. CHAR.—*Spatha* monophylla. *Spadix* cylindraceus, undique floribus tectus. *Perianthium* tetraphyllum. *Bacca* tetrasperma.

Pothos *acaulis;* foliis cuneato-lanceolatis, basi subtruncatis.

P. acaulis, JACQ. *St. Amer.* p. 240. t. 153.—LINN. *Sp. Pl.* App. p. 1675.—WILLD. *Sp. Pl.* v. i. p. 684.—AITON, *Hort. Kew.* ed. 2. v. i. p. 289.—PLUM. *Descr. des Pl. d'Amer.* t. 51. (not 57.) above fig. i.

Parasitical in its native country upon the trunks of trees, but growing readily in our stoves in pots of common mould; yet even then, its numerous, thick, long, simple, flexuose and fleshy fibres are principally thrown out upon the surface of the soil. From above these, the *leaves* immediately rise without any stem, in a beautiful circular tuft, resembling, in their mode of growth, the fronds of *Asplenium Nidus.* These leaves, though they do not commonly exceed one or two feet in height, yet attain, in the hot-house at Liverpool, to a length of four feet, and a breadth of one. They are cuneato-lanceolate, acute or subacuminate at the extremity, at the base somewhat truncate, and shortly petiolate. The substance is thick and fleshy, or between fleshy and coriaceous, with a central strong midrib, and a few obscure, lateral nerves. From among the centre of the leaves springs up the *scape,* a foot and a half or more in length, cylyndrical, fleshy. *Spatha* curved downward (as is often the scape) from 4 to 6 inches long, of one piece, lanceolate, greenish, revolute. *Spadix* 8 or 10 inches in length, about as thick as the finger, cylindrical and tapering, pale green, densely and symmetrically covered with *flowers;* each of which is formed of 4 truncated, subtriangular, fleshy *scales,* within each of these is a *stamen,* two opposite ones generally in perfection at the same time, whilst the two others are more or less advanced. *Filament* dilated, white, flat. *Anther* ovato-quadrate, at first oblique, afterwards vertical, 2-celled, yellow. *Germen* globose, but with four obtuse angles. *Stigma* sessile, forming an obtuse point.

There exist no figures of this fine plant, that I am aware of, except those of JACQUIN and PLUMIER above quoted, the latter of which gives a very much reduced representation of it. In both of these, however, the midrib and the lateral nerves are so distinctly marked, that I cannot but wonder at the leaves being defined by LINNÆUS and all succeeding authors as "*enervia.*" This character, indeed, is meant to be put in opposition to the distinguishing mark of *P. lanceolata;* the foliage of which, besides having a midrib, is furnished with a lateral nerve on each side, near the margin, which give rise to the term "*folia trinervia.*"

JACQUIN mentions this species as an inhabitant of the vast mountain forests of Martinique, in which island it is known by the name of *Rat's-tail.*

It has flowered in the stoves both of the Liverpool and Glasgow Botanic gardens, and was received by them from Jamaica. According to the *Hortus Kewensis*, its first introduction into Britain was in 1790, when it was brought by —— ELCOCK, Esq. from Barbadoes.

Fig. 1. Leaf of a very young plant; and Fig. 2. Full grown Spadix, *natural size.* Fig. 3. Portion of the spadix, with flowers. Fig. 4. Young stamens. Fig. 5. The same, more advanced. Fig. 6. Pistil.—*All but* Figs. 1. & 2. *more or less magnified.*

Pleurothallis racemiflora

Lindley Lith.

J. Juan

PLEUROTHALLIS RACEMIFLORA.

Racemed Pleurothallis.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Div. IV. Anthera *terminalis mobilis decidua.* Massæ pollinis *demum cereaceæ.*—Br.

Gen. Char.—*Labellum* articulatim connexum cum basi simplici vel brevissime producta columnæ. *Petala* 2, antica exteriorum inferne connata. *Massæ pollinis* 2, exsulcæ.—*Br. in Hort. Kew.*

Pleurothallis *racemiflora*; caule elongato unifolio, scapo folio oblongo emarginato longiore erecto, floribus racemosis secundis acuminatis tetrapetalis.—*Lindl.* MSS.

Pleurothallis racemiflora, Lindl. *Hist. Orchid. ined.*
Dendrobium racemiflorum, Swartz, *Fl. Ind. Occid.* p. 1543.

Root small, composed of a few simple fibres. *Plant* tufted, about 6 inches in height. *Stem* rounded, erect, monophyllous, furnished with brown and dry sheaths, of which the upper one is carinated, and the longest. *Leaves* oblongo-lanceolate, nearly flat, almost nerveless, emarginate, longer than the stem.

Raceme four times longer than the leaf, slender, with the peduncle interruptedly sheathed, equal in length with the leaf, furnished at the base with the rudiment of a leaf. *Flowers* pale green, rather large, variously turned, but generally with the lip forward. *Pedicels* slender, articulate with the germen, furnished with a cylindrical, subtruncated, closely folded bractea. *Perianth* of 4 leaflets, patent, the leaflets quite glabrous, ovato-lanceolate, the lower one 2-nerved. *Lip* anterior, thrice as small as the perianth, with the *claw* winged, appressed to the base of the column, and slightly articulated with it; *border* oblong, plane, and as it were hastate, obsoletely 3-nerved. *Column* standing forward, shorter than the lip, attenuated upwards, on each side incrassated at the margins, which are confluent at the base. *Stigma* small, quadrate, concave. *Rostellum* (a process above the stigma) protruded. *Receptacle of the Anther* (*Clinandrium*, Lindl.) subcucullate, winged. *Anther* globose, opercular, terminal, deciduous, inserted within the margin of its receptacle, internally 1-celled. *Pollen-masses* 2, roundish-ovate, cereaceous, having at the extremity a common, short, pulverulent point of attachment.—*Lindley.*

Communicated by the Horticultural Society of London, who received the plant from Mr LODDIGES. It produced flowers in the Society's garden at Chiswick in April 1824. Mr LODDIGES introduced it from the West Indies.

For the drawing and admirable description of the species above given, I am indebted to JOHN LINDLEY, Esq. who favoured me with the following additional observations. "It is nearly related to *Stelis pulchella* of HUMBOLDT and KUNTH, which is a *Pleurothallis* also, notwithstanding the 5 divisions of the flower. In this genus, as in *Oncidium*, the greater or less degree of cohesion of the two anterior segments, or even the absolute want of it, do not constitute a generic difference; and all the species referred to *Stelis*, which have a "labellum difforme cum columna articulatum," must be removed to *Pleurothallis*, whether they are tetra- or pentapetalous. The exterior segments of the perianth in this species are not connate at the base, but approximate. A faint but agreeable smell is perceptible in the blossoms."

Fig. 1. Front view of a flower. Fig. 2. Germen, Column and Lip. Fig. 3. Front view of the column. Fig. 4. Inside view of the anther, with its pollen-masses. Fig. 5. Pollen-masses removed from the anther.—*All more or less magnified.*

Dendrobium? pubescens

DENDROBIUM? PUBESCENS.

Downy-flowered Dendrobium.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Gen. Char.—*Labellum* ecalcaratum, articulatum cum apice processus unguiformis, cujus lateribus petala antica adnata, calcar æmulantia. *Massæ pollinis* 4, parallelæ.—*Br.*

Dendrobium? *pubescens;* bulbo oblongo-ovato, foliis distichis lanceolatis glabris, scapo elongato, floribusque laxe spicatis pubescentibus, labello oblongo trilobo, petalis tribus, exterioribus inferne unitis basi saccatis.

Roots: rather long, simple, brown (even in the youngest of them), thick, fleshy fibres, proceed from the lower part of the stem. *Stem* forming an oblongo-ovate bulb, sheathed in a distichous manner with the broad bases of the leaves, which are of a pale green colour, and submembranaceous; this bulb tapers at the base into a slender cylindrical stem, covered with sheathing scales. *Leaves* 6 to 8 inches long, lanceolate, rather obtuse, waved, subcoriaceous, glabrous, distichous. *Scapes* one or two in number, a foot and a half high, arising from a scaly sheath at the base of the bulb, terete, very pubescent.

Flowers in a lax *spike*, rather distant, each subtended by an oblong, concave bractea. The *three exterior petals* equal, oblong, acute, greenish-yellow, glabrous within, very pubescent without, united at the back of the flower, in its lower half, open in the front, except at the base, where a didymous sack or pouch is formed: the two inner petals much smaller, oblong, glabrous, arising from the back of the column. *Lip* oblong, shorter than the petals, erect and parallel with the petals, oblong with the sides incurved, 3-lobed, the lateral lobes small, the terminal one roundish, wavy at the margin, notched and recurved at the extremity; jointed upon the decurrent base of the column, but scarcely unguiculate. The colour is deep yellow, blotched and streaked with purplish-red. *Column* elongated, free only in its upper part, where it is yellowish, elongated and white below, and confluent with the petals to its very base. *Anther* sunk into a hollow at the top of the column, hemispherical, deciduous, 2-celled. *Pollen-masses* 4, deep yellow, waxy, roundish, compressed, cleft to the base, and there inserted upon a short, somewhat granulated stalk, and united by a yellow gland. *Germen* cylindraceo-clavate, straight, very downy.

I have already alluded to the successful manner in which the Messrs SHEPHERD cultivate the rare, parasitic orchideous plants: the present individual is another proof of the correctness of this opinion. The plant itself was sent to the Liverpool Garden from Calcutta by Dr WALLICH in the year 1820, and in March 1824, it has produced two beautiful spikes of flower. At first sight, the inflorescence bears no inconsiderable similitude in general structure to that of *Dendrobium*, especially in the nature of the three external petals, and their union at the base into a kind of sack. The lip, however, seems to be considerably different, and is decidedly 3-lobed. The position of the flowers is not a little remarkable; they all, though not bifarious in their insertion upon the scape, have a secund direction, as have the petals themselves of the flowers; so that, on looking along one side of the scape, you see the interior of all the petals. The anther differs from *Dendrobium*, at least from that of *D. Pierardi*, in having no appendage whereby it is attached to the column after it has sprung from its place of insertion; and, what is perhaps of more importance than any other circumstance, there are, instead of two pairs of parallel pollen-masses, easily separated from each other, four pairs, connected together by their subpedicellate bases upon a common gland! In all probability, this peculiarity will be the foundation of a distinct genus; but with my present limited knowledge of what ought to form essential characters in this curious but interesting family, I prefer ranking the present individual under a well established genus, although it may vary from it in some material point. Besides transmitting to me a spike and leaf of this species, Mr H. SHEPHERD was also so kind as to send me a sketch of the whole plant, by means of which I have been enabled to give the accompanying complete representation of it.

Fig. 1. Back view of a flower, *natural size*. Fig. 2. Front view of a flower, the lip being forced back, to shew the inner part of the inflorescence, which is thus entirely exposed to view. Fig. 3. Top of the column, from which the anther, Fig. 4. is removed. Fig. 5. Inside view of an anther-case. Figs. 6. & 7. Pollen-masses.—*All but* Fig. 1. *more or less magnified.*

Convallaria asparagifolia

CONVALLARIA OPPOSITIFOLIA.

Opposite-leaved Solomon's Seal.

HEXANDRIA MONOGYNIA.—NAT. ORD. *SMILACINEÆ.*

GEN. CHAR.—*Corolla* 6-fida. *Bacca* maculosa, 3-locularis.—*Br.*

Convallaria *oppositifolia*; caule tereti, foliis oppositis oblongis acuminatis nitidis breviter petiolatis, pedunculis umbellatis 3–5 floris, perianthiis oblongis.

C. oppositifolia, LODD. *Bot. Cab.* t. 640.

Stem about a foot high, erect, curved, cylindrical, glossy, with a few deciduous, distant, oblong, membranaceous scales. *Leaves* 3–4 inches in length, opposite, subsecund, in distant pairs, oblong, very much acuminated, somewhat waved, very glossy, of a bright and deep green above, paler beneath, slightly petiolate, subsecund.

Flowers verticillate, drooping. *Peduncles* springing from the axils of the leaves, short, pedicels 3–5, jointed just beneath the flower, upper joint swollen. *Perianth* $\frac{3}{4}$th of an inch in length, cylindrical or somewhat swollen at the base, white, thickish, and slightly coriaceous, with faint dotted red lines, mouth with 6 short, somewhat spreading green teeth. *Stamens* 6, alternate with the teeth of the perianth, and inserted near the middle. *Filaments* white, curved, pubescent, running up the back of the anthers. *Anthers* sagittate, yellow. *Pistil: Germen* ovate, with three obtuse angles. *Style* shorter than the perianth: *Stigma* trifid, villose.

First published by Mr LODDIGES, having been sent to him under the above name by Dr WALLICH from Nepaul, in 1819. It has been received from the same source into the Glasgow Botanic Garden, where it blossomed in the month of April, being plunged in the bark-pit of the stove. It is a plant of considerable elegance; its leaves are peculiarly bright and glossy. In character it ranges with the British *C. polygonatum* and *C. multiflorum;* but approaches still more nearly to a new species of the genus, of which I have received dried specimens from my excellent and much-valued friend Dr WAL-

LICH, and which is also indigenous to Nepaul. In the latter individual, the whole plant is much smaller, the leaves considerably narrower, lanceolate, not decidedly acuminate, more petiolated, the inflorescence of a less size, and, what decidedly stamps it as a different species, its stalk is angular.

Fig. 1. Single flower. Figs. 2. & 3. Stamens. Fig. 4. Perianth cut open to shew the stamens and pistil. Fig. 5. Upper part of the style and stigma.—*All more or less magnified.*

Trimezia fosteriana

TRIZEUXIS FALCATA.

Falcate Trizeuxis.

GYNANDRIA MONANDRIA.—NAT. ORD. *ORCHIDEÆ.*
—SECT. V. *Br. Prodr.* 1. 330.

GEN. CHAR.—*Perianthium* bipartitum, lacinia superiore biloba, inferiore tripartita inflata. *Labellum* columna parallelum, limbo recurvo dilatato. *Stigma* excavatum. *Anthera* unilocularis carnosa. *Pollinis massæ* 2, pedicello fusiformi carnoso adhærentes, ipsis duplo longiori. *Arboribus parasiticæ. Folia pauca, disticha. Racemi compositi. Flores non resupinati.—(Lindl.)*

Trizeuxis *falcata*; foliis falcatis enervibus, floribus confertis.

T. falcata, LINDL. *Collect. Bot.* t. 2.

Parasitic on the trunks of trees. *Roots* fibrous, brown. *Leaves* distichous, recurvo-falcate, acute, laterally compressed, and thus vertical, fleshy, glaucous green, grooved at the base for the reception of the lower part of those leaves which are placed immediately above them.

Scape axillary from the base of the plant, four or five inches high, paniculate, branched almost from the base, the branches as well as the branchlets alternate, distichous and patent, slender, terete. *Bracteas* small, green, placed at the base of every flower, and of every ramification, subulate. *Flowers* collected into conical heads at the extremity of the ramuli, small, pale yellow-green, resupinate, according to the common acceptation of the term, as applied to this family; that is, the germen is not twisted, and the parts of the inflorescence are in their proper situation. *Petals* nearly equal; upper ones, or segments of the perianth the smallest, oblong, united together for more than half their length from the base. Two lateral petals very concave, so as to be almost semicylindrical, but when spread open they are nearly ovate. Lower petal ovate, very gibbous at the back. *Lip* a little longer than the corolla, standing forward, and somewhat appressed to the column, oblong, grooved, 3-lobed, green at the base, deep orange at the extremity, lateral lobes small, middle one large, recurved, all acute. *Column* oblong, laterally compressed, grooved in front, and near its upper part bearing the concave stigma. *Anther* large, transversely oblong, whitish, operculiform, fixed by the back, 1-celled, glandular on the

Pollen-masses 2, linear-oblong, deep yellow, fixed near the extremity of a linear white stalk; and this, at its base, has an oblong, orange coloured gland, which stands out beyond the top of the column, and just beneath the closed anther.

A highly curious little orchideous plant, which was reared in the stove of the Botanic Garden at Liverpool, to which establishment it had been sent, as Mr H. SHEPHERD informs me, from Trinidad, through the well-known liberality of Baron DE SHACK, M. D. It flowered in May 1824. It had previously blossomed in Mr GRIFFIN's collection in South Lambeth, in 1820, and was then figured by Mr LINDLEY, in his *Collectanea Botanica*, under the same appellation, and with the generic characters, which I have adopted.

Fig. 1. Single flower in its natural position. Fig. 2. Front view of flower. Fig. 3. Column, and three of the petals. Fig. 4. The upper united petals. Fig. 5. Lip. Fig. 6. Side view of the column, with its anther closed. Fig. 7. Upper part of the column, with the anther-case thrown back, to shew the situation of the pollen-masses. Fig. 8. Back and front view of the pollen-masses.—*All more or less magnified.*

Ornithocephalus gladiatus

ORNITHOCEPHALUS GLADIATUS.

Sword-leaved Ornithocephalus.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Sect. IV. Anthera *terminalis mobilis decidua.* Massæ pollinis *demum cereacæ*—Br. *in Hort. Kew.*

Gen. Char.—*Flores* resupinati. *Labellum* subpedicellatum longe attenuatum. *Petala* subæqualia, duo superiora demum reflexa. *Columna* brevis hinc apice una cum antheram longissime rostrata. *Massæ pollinis* 4, pedicello valde elongato, basi biglanduloso affixæ.

Ornithocephalus *gladiatus.*

Roots numerous, flexuose, fibrous, whitish. *Leaves* distichous, vertical, each embracing the one above it by means of a cleft in its base, sword-shaped, compressed, succulent, rather obtuse, slightly curved inwards, of a glaucous green colour.

From the axils of one of the leaves springs the *peduncle*, scarcely exceeding the leaves in length, at the extremity forming a raceme or lax spike of a few small flowers; each flower having an ovato-cordate amplexicaul bractea at the base, and two or three others below upon the peduncle. *Flowers* resupinate (or having the lip upwards). *Petals* 5, the lower subequal, the three inferior ones bending forward, the two upper ones at length bent back; all of them nearly equal in size, pale green, submucronate. *Lip* inarticulated, inserted upon a short stalk; at the base broad, thickish, yellow-green, slightly concave in the middle, with two lobes on each side of the little stalk; suddenly attenuated into a long, white, membranaceous, incurved extremity, which forms two wings along the back of the broad, thickened part.

Column short, with the concave *stigma* in the front; the extremity in the fore part forming a remarkably long beak, curved downwards. The *anther* is green, corresponding with the beak, being broad at the base, and somewhat 4-lobed, and suddenly attenuated into a long curved beak. The base is distinctly 4-celled, and receives the four masses of *pollen*, which are globular, deep yellow, sessile or nearly so, and which are attached to the upper side at the extremity of a very long white footstalk, which takes the form of the beak of the anther and top of the stigma, and which, at its base, has two lips or glands, unequal in size. These glands project beyond the margin of the anther. *Germen* subcylindrical, curved, furrowed, not twisted.

For this very remarkable orchideous plant, our garden is indebted to the liberality of Baron De Schack, M.D. who transmitted it from the island of Trinidad. It has been cultivated by us in the same manner as the other parasitic Orchideæ, the soil being a mixture of loam and peat, and its situation a warm shelf in the stove.

There is a peculiarity in the structure of the lip of this plant, which I have not seen in any other individual of the tribe; but the circumstances which most strikingly distinguish it from every other with which I am acquainted, and which I. have considered to be of sufficient importance to constitute the ground of a generic distinction, are to be found in the beak-like processes of the top of the column and of the anther, which singularly resemble the head and beak of a bird, and the nature of its stalked pollen-masses.

Fig. 1. Flower, fully expanded, in its natural position. Fig. 2. Flower recurved, and not entirely expanded. Fig. 3. Inside of the lip. Fig. 4. Outside of the same. Fig. 5. Column and anther. Fig. 6. Top of the column, with its pollen-masses. Fig. 7. Anther-case, removed from the column. Fig. 8. Pollen-masses, stalk and glands. Fig. 9. Back of the upper part of this stalk, with the pollen-masses.—*All more or less magnified.*

Trichilia odorata

TRICHILIA ODORATA.

Sweet-scented Trichilia.

DECANDRIA MONOGYNIA.—NAT. ORD. *MELIACEÆ.*

GEN. CHAR.—*Calyx* quinque- (vel quadri-) dentatus). *Petala* quinque (vel quatuor). *Nectarium* dentatum (cylindricum?) in apicem dentium *Antheras* gerens. *Capsula* trilocularis, trivalvis, trisperma. *Semina* arillata.

Trichilia *odorata*; foliis opposito-pinnatis, foliolis ovato-lanceolatis glabris, racemis glomeratis axillaribus, petalis quatuor, dentibus nectariferis bifidis.

T. odorata, "ANDR. *Bot. Repos.* t. 637."—SMITH, *in Rees' Cycl.*

A *shrub*, reaching, in the stove of the Liverpool Botanic Garden, to a height of about 8 feet, with long cylindrical branches, the younger of which are green, and slightly pubescent. *Leaves* very numerous, alternate, pinnated with generally from three to four pairs, and an odd one, of opposite leaflets, which are shortly stalked, ovato-lanceolate, dark green, subcoriaceous, waved, glabrous, entire, faintly nerved, paler beneath. *Flowers* arranged in short, compound, axillary clusters, of a pale green hue, and small. *Pedicels* subpubescent, as well as the calyx, which is minute, composed of 4 spreading lobes or teeth, minutely ciliated at the margin. *Petals* four, ovato-concave, rather fleshy, pale green. *Nectary*, or filaments, of eight, ovate, pale green, slightly concave, bifid scales, united at the base by a fleshy ring which surrounds the base of the germen. *Anthers* eight, one on each of the nectariferous scales, and between the cleft, linear, pale yellow, 2-celled. *Germen* ovate, 3-celled. *Stigma* sessile, 3-lobed. The *fruit* I have not seen.

This species departs from the characters of the genus, as they are laid down by JUSSIEU and SMITH; for it has a calyx which is neither tubular nor bell-shaped; its nectary also cannot be termed cylindrical, being composed of eight scales, distinct to their base, where they are united by a fleshy ring, which encircles the base of the germen. With the specific definition of *T. odorata*, also, as this is stated by SMITH (for I

have not an opportunity of referring to either the figure or description of ANDREWS), this plant does not coincide in all all points, for I find that there exist only eight (not ten), distinct segments to the nectary; the anther is linear, sessile and erect (not ovate, inflexed and slightly stalked), and the flowers, instead of possessing a musk-like smell, exhale a fragrance which may aptly be compared to that of the Jonquil. Perhaps the two plants may not belong to the same species, though the characters in all other respects correspond with each other.

It seems to have been introduced into England from St Vincent's by Dr A. ANDERSON. The shrub from which the specimens here delineated were gathered, was sent to the Liverpool Botanic Garden from the West Indies, and it has flowered there during the winter season, for several successive years.

Fig. 1. Small clusters of flowers. Fig. 2. Back view of a flower. Fig. 3. Flower deprived of its calyx and corolla. Fig. 4. One of the nectariferous scales, with its anther. Fig. 5. Germen, shewing the fleshy ring at the base, from which the scales of the nectary are removed. Fig. 6. Section of the germen.—*All more or less magnified.*

Pleurothallis ? ruscifolia

PLEUROTHALLIS? COCCINEA.

Red-flowered Pleurothallis.

GYNANDRIA MONANDRIA.—NAT. ORD. *ORCHIDEÆ.*

GEN. CHAR.—*Labellum* articulatum, connexum cum basi simplici vel brevissime producta columnæ. *Petala* duo antica exteriorum inferne connatum.—*Br. in Hort. Kew.*

Pleurothallis *coccinea*; foliis lineari-lanceolatis obtusis distichis, floribus secundis, labello basi breviter calcarato incluso.

Parasitic. *Root* a few simple, whitish, flexuose fibres. *Stems* scarcely any; they may rather be considered oblong, compressed bulbs, formed by the sheathing distichous bases of the leaves. *Leaves* linear-lanceolate, obtuse, glabrous, 5 or 6 inches long, distichous, yellow-green, of a somewhat thick and coriaceous texture. *Peduncle* from within the sheathing base of the leaves, 6 or 8 inches long, drooping.

Flowers in racemes, when in bud inclosed within imbricated, distichous, ovato-acute bracteas, afterwards, when fully expanded, all pointing upwards and secund, of a deep rose colour. The three uppermost petals are subconnivent, and stand forward, of a broadly ovate form, concave; the two inferior ones are a little inclined downwards wholly beneath the lip, united for the whole length of their lower margin into one portion, like the keel of many papilionaceous flowers, and laterally compressed so as to be closed except at the very base, where it receives the spur of the lip: below at the base it is gibbous. *Lip* standing forward, rather longer than the petals, oblong, slightly spreading and deflexed at the extremity, notched at the margin, of a fine deep rose colour, with two obscure tubercles, and yellow at the base above; white at the base below, and there, where it joins the column, lengthened out into a short and acute spur. *Column* short, cylindrical, pure white. *Anther* ovate, terminal, white, fixed to the back of the stigma behind by a short filament, 1-celled, inclosing two, ovato-globose, yellowish-white *pollen-masses*, with an impression behind, fixed to the extremity of a filiform stalk, whose base has an oblong gland protruded just beyond the anther. *Stigma* concave, with two minute, upright, red teeth, on each side at the top, and two large incurved orange-brown ones below in front. *Germen* clavate, not twisted, reddish-green.

It really appears as if almost every new species of the parasitical orchideous plants which are now so abundantly cultivated in our stoves, might likewise constitute a new genus, so variable are the form and structure of their flowers. I am far from thinking that the present individual should continue in the genus *Pleurothallis*, but it will be more easy to decide upon the proper place of it, and of many others of the same family, when we shall be able to compare the figures and analyses of the inflorescence of several species together: on this account I am more anxious to give correct descriptions and faithful representations, than to attempt at what might prove but an unsatisfactory arrangement.

Introduced to the Botanic Garden of Glasgow, through the favour of our valued correspondent Baron DE SCHACK, M.D. from the Island of Trinidad. It flowered in the month of June 1824 *.

Fig. 1. Side view of a flower. Fig. 2. Front view of the same, having the two lower petals curved and concealed by the labellum. Fig. 3. Column and lip. Fig. 4. Two lower and united petals. Fig. 5. Side view of the column, with the lid thrown back, and shewing the pollen-mass. Fig. 6. Front view of the column, with the anther removed, and the pollen-mass in the position in which it is then seen. Fig. 7. Front view of the pollen-mass. Fig. 8. Back view of the same.—*All more or less magnified.*

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* Since the above has been printed, I find a plant figured in LODDIGES' Botanical Cabinet, under the name of *Rodriguezia lanceolata*, which I cannot doubt is the same as the one here given. It must be confessed, too, that my plant comes very near to the *Rodriguezia secunda* of HUMB. et KUNTH, Nov. Gen. t. 92. if it be not the very same. If so, according to these authors, it is only distinguishable from the genus *Pleurothallis*, by the obscurely spurred labellum.

Monarda Russelliana

MONARDA Russelliana.

Narrow-leaved Bergamot.

DECANDRIA MONOGYNIA.—Nat. Ord. *LABIATÆ.*

Gen. Char.—*Calyx* cylindricus, striatus. *Corolla* ringens, labio superiore lineari, filamenta simplicia involvente.

Monarda *Russelliana*; floribus capitatis, foliis lanceolatis serratis glabris.

M. Russeliana, Nutt. *Trav. in the Arkansa*, p. 141.

Apparently a biennial plant. *Stem* a foot or more in height, erect, simple, square, with the angles margined, glabrous. *Leaves* rather distantly placed in opposite pairs, lanceolate, coarsely serrated, dotted and paler beneath, the lower ones subpetiolate, the upper ones sessile.

Flowers in terminal heads, and bracteated. *Bracteas* ovate, acuminated, entire, slightly hairy, purple in the middle. *Calyx* linear-oblong, tubular, swelling in the middle, pubescent, marked with elevated striæ, 5-toothed, teeth spreading. *Corolla* an inch and a half long, slender, pubescent. *Tube* and *upper lip* pure white, lower lip subtrilobed, waved and twisted, white, spotted with reddish-purple blotches. *Stamens* two, united laterally by the 1-celled anthers. *Filament* much incurved, white, spreading above where it supports the anthers. *Anthers* standing close together, deep purple-brown, 1-celled, and when burst so covered on their surface with pollen as to appear but one anther. *Germen* 4-lobed, placed on a large cup-shaped gland. *Style* very long. *Stigma* bifid.

Of this pretty and very distinct species of *Monarda*, seeds were sent to our garden by Mr Dick of Philadelphia, who received them from Mr Nuttall. This latter gentleman, its discoverer, found it in the valley of the Arkansa; and in the account which he has published of his travels, he thus feelingly describes the circumstance of his naming this plant in honour of his amiable companion. "It is with a satisfaction clouded with melancholy, that I now call to mind the agreeable hours that I spent at this station (Belle Point), while accompanied

by the friendly aid and kind participation of Dr Russell, whose memory I have faintly endeavoured to commemorate in the specific name of a beautiful species of *Monarda*. But relentless death, whose withering hand delights to pluck the fairest flowers, added, in the fleeting space of a few short days, another trophy to his mortal garland; and Russell, the only hope of a fond and widowed mother, the last of his name and family, now sleeps obscurely in unhallowed earth."

This plant is found very easy of cultivation, being kept in a shady part of the greenhouse. It will probably prove sufficiently hardy to bear the outer air, as the other species of the genus.

Fig. 1. A flower and bractea. Fig. 2. Back view of the stamens. Fig. 3. Front view of the same. Fig. 4. Pistil. Fig. 5. Portion of the stem.—*All more or less magnified.*

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BAPTISIA? NEPALENSIS.

Nepaul Baptisia.

DECANDRIA MONOGYNIA.—Nat. Ord. *LEGUMINOSÆ.*

Gen. Char.—*Cal.* semi-4–5-fidus, bilabiatus. *Cor.* papilionacea, petalis longitudine subæqualis: vexillum lateribus reflexis. *Stamina* decidua. *Legumen* ventricosum, pedicellatum, polyspermum.—*Br. in Hort. Kew.*

Baptisia? *nepalensis*; foliis ternis breviter petiolatis, foliolis lanceolatis subsericeis, stipulis petiolum subæquantibus ovatis acutis deciduis, germinibus pubescentibus, corollæ alis involutis.

Stem shrubby, branched, rounded, glabrous. *Leaves* numerous upon the branches, often crowded, ternate, petiolate, the petiole short, grooved above; leaflets 3–5 inches long, lanceolate, sessile, jointed upon the common petiole, subacuminate, slightly silky, veined. *Stipules* deciduous, large, ovate, acute, reflexed, pale green, each pair often united at the margin.

Flowers in subverticillate short panicles, axillary or terminal, large, handsome, yellow. *Peduncles* and arched *pedicels* silky, bracteated, bracteas large, resembling the stipules, and silky. *Calyx* silky, somewhat 2-lipped, upper lip bifid, erecto-patent, lower lip trifid, soon reflexed. This calyx sometimes falls away entire from the receptacle, (Figs. 2. & 3.) *Petals* nearly equal in length. *Vexillum* erect, very large, broadly obcordate, the margins reflexed. *Alæ* standing forward, oblong, clawed, singularly involute at the extremity. *Carina* a little deflexed, oblongo-ovate. *Stamens* 10, free, rather shorter than the style, as long as the keel. *Filaments* white. *Anthers* oblong, yellow. *Germens* pedicellate, linear, silky, style curved upwards, filiform. *Stigma* subacute, glabrous.

Raised by my valued friend P. Neill, Esq. from Nepaul seeds sent to this country by Dr Wallich, and cultivated in the open air in his interesting garden at Canonmills, near Edinburgh, where, trained to the wall, it forms a handsome shrub, which first produced its fine large yellow blossoms in the latter end of May. There can be no doubt but that it will form a most valuable addition to our stock of hardy shrubs.

I possess specimens of the same plant, gathered in Nepaul, sent to me by Dr WALLICH, but without a name. Being ignorant of the structure of the perfect seedvessel, I am uncertain in what genus it should be placed. The *Baptisiæ* are all natives of North America, and the fruit of this individual will probably be found to differ essentially from that which belongs to that genus. As far as regards the other characters, which are taken from the flower, it seems sufficiently to agree with *Baptisia* *.

Fig. 1. Calyx fallen from the receptacle. Fig. 2. Flower, deprived of its petals and calyx. Fig. 3. Pistil. Fig. 4. Flower from which the calyx and vexillum are removed. Fig. 5. The same, from which the alæ are also removed. Fig. 6. Vexillum.—*All more or less magnified.*

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* Since the above was printed, and since the working off of a large proportion of the plates, a seed-vessel has become fully formed upon Mr NEILL's plant: this is broadly linear, compressed, with a rather long curved acumen, and containing about eight seeds. In the structure of the seed-vessel, it therefore departs from the genus *Baptisia*, and may perhaps be united with *Thermopsis* of Mr BROWN in Hort. Kew. v. iii. p. 3. "*Cal.* oblongus, semi-5-fidus, bilabiatus, postice convexus, basi attenuata. *Cor.* papilionacea, petalis longitudine subæqualibus: vexillum lateribus reflexis; *carina* obtusa. *Stamina* persistentia. *Legumen* compressum, lineare, polyspermum."—*Br.* To this genus belong *Th. lanceolata*, Br. (Podalyria lupinoides, Willd.) native of Siberia, and the *Thermia rhombifolia* of NUTTALL, native of America; though in my specimens from Dr RICHARDSON, the margins of the vexillum are not reflected.

I may here add, that the leaves in Mr NEILL's plant (probably in consequence of cultivation) are twice or thrice the size of those upon the native specimens; and that Mr DON, who, however, had not had an opportunity of examining the seed-vessel, was also of opinion that the plant might be referred to *Baptisia*.

Thingsphilia fimbriflora

CHRYSIPHIALA PAUCIFLORA.

Few-flowered Chrysiphiala.

HEXANDRIA MONOGYNIA.—NAT. ORD. *AMARYLLIDEÆ*, BR.

GEN. CHAR.—*Perianthium* subinfundibuliforme, tubo inferne angustato pedunculiforme basi subincrassato, limbo dilatato sexfido. *Corona staminea* sexfida. *Stamina* erecta, stricta. *Stigma* subincrassatum, obsolete trifidum.

Chrysiphiala *pauciflora*; floribus ante folia, perianthiis laciniis erecto-patentibus, staminibus subæqualibus, corona brevi tubulosa, dentibus bifidis.

Scape appearing before the leaves, which latter I have not the opportunity of describing, rounded, glaucous, about 4 inches high. *Umbel* of 2 flowers, having at the base a *spatha* of two lanceolate, membranaceous leaflets, which are half as long as the tube of the shorter flowers. One of the flowers subsessile, later than the other, which is pedicellate. *Perianth* croceous, nearly two inches long, the tube infundibuliform, contracted below the middle (and somewhat pedunculiform), and at the base again slightly incrassated, superior: limb 6-cleft, erecto-patent, with the segments concave, lanceolate, rigid, the outer ones narrower, all green on the back, and incurved. *Crown* short, croceous, with a bifid tooth between the stamens. *Stamens* erect, arising from the sinuses of the teeth, those longer which are placed opposite the outer segments of the perianth. *Filaments* subulate. *Anthers* oblong, (destitute of pollen). *Germens* 3-celled, ovules many, two-ranked, plane. *Style* filiform, as long as the crown, a little twisted, thickened towards the base. *Stigma* trifid, subirregular.—*Lindl.*

Flowered in the greenhouse of the Horticultural Society's establishment at Chiswick, in the month of April 1824, from bulbs introduced by JAMES COWAN, Esq. along with many other rarities from Peru. Both the drawing and description, made from the living plant, were communicated by my friend JOHN LINDLEY, Esq.

Mr KER observes, when giving an account of *Chrysiphiala flava*, that all the known species of this genus are natives of Peru, and that *Pancratium flavum, coriaceum, latifolium* and *recurvatum*, belong to it. The genera *Stenomesson, Carpodetes* and *Leperiza* of the Honourable Mr HERBERT, he further considers as merely individuals of the present genus *.

Fig. 1. Crown of the Perianth and Stamens. Fig. 2. Style and vertical section of the germen. Fig. 3. Upper part of the style and stigma. Fig. 4. Transverse section of the germen.—*All more or less magnified.*

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* A drawing of the leaf has been sent to me by Mr LINDLEY, but not till after many impressions of the plates were printed. Mr LINDLEY thus describes the leaf: "Nearly erect, lanceolate, petiolate, quite glabrous, fleshy, slightly plaited, dark green above, beneath somewhat glaucous, with the midrib incomplete, depressed above in the middle, on the under-side very prominent."

2

3

Callicarpa longifolia

CALLICARPA LONGIFOLIA.

Long-leaved Callicarpa.

TETRANDRIA MONOGYNIA.—NAT. ORD. *VERBENACEÆ, Juss. in Ann. du Mus. Br.*—VITICES, *Juss. Gen.*

GEN. CHAR.—*Calyx* campanulatus, 4-fidus, æqualis. *Cor.* campanulata, 4-fida, regularis. *Stam.* 4, æqualia, exserta. *Stigma* capitatum. *Bacca* (parva) monolocularis, 4-sperma. *Semina* subossea.—*Br.*

Frutices *oppositifolia, pube ramosa vel stellari glandulisque sessilibus insuper plerumque conspersi, furfuracei.* Folia *simplicia.* Cymæ *axillares, dichotomæ.* Flores *parvi, albi vel purpurascentes.* Antheræ *sæpius glandulosæ, albumen tenue.*—BR.

Callicarpa *longifolia;* foliis lanceolato-acuminatis superne serratis adultis glabriusculis, pedunculo petiolum paullulum superante.

C. longifolia, LAM. *in Enc. Meth.* v. 1. p. 563.—*Illustr.* t. 69. f. 2.—WILLD. *Sp. Pl.* v. 1. p. 261.—ROXB. *Fl. Ind.* v. 1. p. 409.?

A *shrub,* with erect weak branches, which are obscurely four-sided, and clothed, especially the younger ones, with stellated pubescence, of which the rays are exceedingly numerous, and such as to give it a mealy appearance to the naked eye. *Leaves* always opposite, 5 or 6 inches in length, lanceolate, somewhat waved, serrated in the upper part, the extremity acuminated and nearly entire, dark green above, paler beneath, the younger ones covered with a stellated pubescence, the older ones pubescent only on the nerves beneath, all of them petiolated, with the petioles scarcely more than half an inch long.

Cymes axillary, small. The *peduncles* or main stalks scarcely exceeding the length of the petiole, the pedicels short, having minute, linear-lanceolate bracteas at their base. *Flowers* small, drooping when fully expanded.

Calyx small, cup-shaped, with four short and very obtuse teeth. *Corolla* subcampanulate, 4-lobed, the lobes erecto-patent, of a white colour, fringed with pink. *Stamens* 4, inserted at the base of the corolla, and exceeding it in length. *Filaments* white, glabrous. *Anthers* oblong, yellow. *Pistil: germen* superior, small, spherical; *Style* about as long as the stamens, filiform, white; *Stigma* obtuse, scarcely capitate. "*Berries* white," (*Roxb.*)

Sent to me by Mr SHEPHERD as a species of *Callicarpa*, which was received by him from China, and which at present has reached only to the height of two feet in the stove of the Botanic Garden at Liverpool. It appears to me to agree in almost every particular with the figure and description of the *C. longifolia* of LAMARCK, which that author states to be found in Malacca by SONNERAT. ROXBURGH's character, above referred to, describes the leaves as long-petioled, and as downy underneath *: this latter circumstance I find to exist only in the young leaves; in the older foliage, the pubescence, if present, is confined wholly to the veins on the under side. The plant described in the *Flora Indica* inhabits Prince of Wales' Island.

Very nearly allied to the present species, as far as I can collect from the characters, are the *C. japonica* of THUNBERG, and the *C. purpurea* of JUSSIEU, (*Poryphyra dichotoma* of LOUREIRO). But the latter, as described by Dr WALLICH, has leaves only two inches long, while the former has no pubescence, short stamens and style, and an acute stigma: if, too, THUNBERG be correct in stating that his *C. japonica* has "*filamenta germini inserta*," it probably belongs to an altogether different genus.

Fig. 1. Two flowers, removed from the cyme. Fig. 2. Single flower, cut open. Fig. 3. Stellated pubescence.—*All more or less magnified.*

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* I have since ascertained the plant of Dr ROXBURGH to be a distinct species, and which I have named, in a collection of plants made in Prince of Wales' Island by Mr POTTS, and which is in the possession of the Horticultural Society of London, *Callicarpa Roxburgii*.

Mussaenda frondosa L. Sp. 1.

F. Bauer Engr. del.

MURRAYA PANICULATA.

Few-flowered Murraya.

DECANDRIA MONOGYNIA.—Nat. Ord. *AURANTIACEÆ, Correa.*

Gen. Char.—*Flores* proportione partium quinaria. *Cal.* 5-partitus. *Cor.* campanulata. *Stam.* 10. *Fil.* lineari-subulatis, antheris subrotundatis. *Fructus* carnoso-baccatus, bilocularis, sæpe abortu monolocularis, loculis monospermis. *Semen* appendens. *Spermodermis* crasse lanata. *Cotyledonum* auriculæ minimæ. *Folia* impari-pinnata.

Murraya *paniculata;* foliolis ovatis acuminatis, floribus terminalibus axillaribusque subsolitariis, baccis oblongis sæpius dispermis.

M. paniculata, " Mal. *Misc.* 1. n. 2. p. 31." (DC.)—De Cand. *Prodr.* v. 1. p. 537.

Chalcas paniculata, Lour. *Coch.* p. 331.

Camunium, Rumph. *Herb. Amb.* v. 5. p. 26. t. 17.

This plant appears, in its native climate, sometimes to form a *tree* of no inconsiderable dimensions, with rounded branches. *Leaves* impari-pinnate, of from 3 to 5 or 7 ovato-acuminate, glabrous, alternate leaflets, the upper ones small and simple.

Flowers terminal and axillary, solitary, extremely fugacious, white, sweet-scented (in our specimens not paniculated). *Calyx* of 5 leaves, with the leaflets subulate, obtuse, thickish, with resinous dots. *Petals* 5, dotted, erecto-patent, obovato-lanceolate, acute and clawed. *Stamens* 10, hypogynous, deciduous, inserted in a single row at the base of an elevated fleshy disk or nectary, unequal, those opposite the calycine segments the longest. *Filaments* plane, subulate, standing so close as almost to form a tube, but always free. *Anthers* roundish, pale, 2-celled. *Germen* oval, granulated, inserted upon the fleshy disk, 2-celled, cells 2-seeded. *Style* filiform, thick, jointed upon the germen, and deciduous, equal in length with the stamens. *Stigma* capitate, flattish at the top, somewhat 2-lobed.—*Lindl.*

Mr Lindley obligingly communicated the drawing and description of this plant from the Horticultural Society's collection, where it flowered in May 1824. The species is a na-

tive of the islands of the Indian Ocean, as well as of China and Cochinchina. In the latter country, LOUREIRO tells us it always becomes a tree, in Amboyna and Java never. It is of recent introduction at the Horticultural Society's garden, having been sent there by Sir STAMFORD RAFFLES from the Island of Sumatra, and it is consequently kept as a stove plant.

The *Murraya paniculata* is a species which has been very imperfectly known, most authors having considered it to be the same with *M. exotica*, although the figure above quoted of RUMPHIUS is excellent, for the period at which it was published, and LOUREIRO's description is equally accurate.

Of the hard wood of this tree, various implements and ornaments are made by the Malays, especially of those parts of it that are more beautifully veined; and its leaves are used medicinally. In China and Cochinchina it is cultivated on account of the fragrance of its flowers.

Fig. 1. Flower, deprived of its petals. Fig. 2. The same, deprived of the petals and deciduous style. Fig. 3. Anthers. Fig. 4. Upper part of the style and stigma. Fig. 5. Germen cut through transversely, to show the cells.—*All more or less magnified.*

Eulophia gracilis

HABENARIA GRACILIS.

Slender Habenaria.

GYNANDRIA MONANDRIA.—NAT. ORD. *ORCHIDEÆ.*

GEN. CHAR.—*Cor.* ringens. *Labellum* basi subtus calcaratum. *Glandulæ pollinis* nudæ, distinctæ (loculis pedicellorum adnatis vel solutis distinctis.—BR. *in Hort. Kew.*

Habenaria *gracilis*; labio tripartito, lacinia media ovata, lateribus linearibus longitudine æquali, cornu subulato germine breviore.

H. gracilis, COLEBR. MSS. *ined.*

Root articulated, fibrous. *Stem* a foot and a half high, slender, tapering. *Leaves* numerous, alternate, amplexicaul, linear-lanceolate, glabrous, nerved, upper ones gradually smaller.

Spike long, single, composed of many, rather distantly placed, dingy orange-coloured flowers. *Bracteas* lanceolate, shorter than the flower. The three outer *petals* lanceolate, spreading, nearly equal; of the three inner ones the two uppermost are broadly ovate, the lowest or *lip* is pendent, tripartite, the lateral segments linear-subfalcate, the middle one ovate, scarcely shorter. *Spur* subulate, shorter than the germen. *Anther* with the base of the cells distinct. *Pollen-masses* yellow.—COLEBR.

A native of shady situations at Sylhet, where it flowers in the rainy season. The drawing and description, made from the living plant, were kindly sent me by Mr COLEBROOKE.

In the structure of the lip, a considerable affinity may be traced between this species and the *Habenaria marginata*, but in their habit the two plants are widely different.

Fig. 1. Flower, *magnified*.

Habenaria marginata F. Swan del.

HABENARIA MARGINATA.

Marginated Habenaria.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Gen. Char.—*Cor.* ringens. *Labellum* basi subtus calcaratum. *Glandulæ pollinis* nudæ, distinctæ, loculis pedicellorum adnatis vel solutis distinctis.—Br. *in Hort. Kew.*

Habenaria *marginata;* labio tripartito, laciniis lineari-lanceolatis, intermedio breviore obtuso, cornu clavato germinis longitudine, anthera utrinque appendiculato.

H. marginata, Colebr. MSS.

Root consisting of two distantly-placed, elongated and subcylindrical tubers, and a few thick, fleshy, white fibres, spreading from the long neck of the root. *Stem* scarcely more than 4 inches long. *Leaves*, those from the root, three or four, spreading, elliptical, entire, glabrous, of a firm texture, dotted, and having a thin, semitransparent border or margin: those from the stem two or three in number, small, lanceolato-subulate, partly sheathing, marginated. *Spike* terminal, conical. *Bracteas* linear-lanceolate. *Flowers* scentless. The three *outer petals* green, spreading, of these three the uppermost is broadly cordate, ribbed, the two lower ones lanceolate: the three *inner petals* deep yellow, of these the two uppermost are oblong, curved laterally, and lying close to and forming a slightly concave helmet with the uppermost outer one: the lowest or *lip* pendent, tripartite, its segments linear-lanceolate, the lateral ones acuminate, the intermediate one shorter and blunt. *Spur* greenish, compresso-clavate, about as long as the twisted germen. *Column* short. *Anther* large, roundish, yellow-green, with two club-shaped, but thin membranaceous appendages, one on each side. *Anther-cases* distant at the base. *Pollen-masses* yellow.

Introduced by accident (according to Mr Colebrooke, to whom I am indebted for the drawing and description of this plant) into the Botanic Garden at Calcutta, where it was first

observed in July 1814, being then in flower, and growing spontaneously in the turf.

Fig. 1. Back view of a flower. Fig. 2. Front view of the same, *magnified.*

Psittacanthus setacea R. Swan

BALSAMINA SETACEA.

Bristle-leaved Balsamina.

PENTANDRIA MONOGYNIA.—NAT. ORD. *BALSAMINEÆ.*

GEN. CHAR.—*Antheræ* 5-biloculares. *Stigmata* 5, distincta. *Capsula* ovata, valvis ad maturitatem introrsum apice elastice inflexis. *Cotyledones* crassæ.

Pedicelli *semper uniflori solitarii aut aggregati.* Flores *in hortis facile pleni.* Capsulæ *pulverulæ.*—DC.

Balsamina *setacea ;* foliis oppositis subsessilibus lineari-lanceolatis cordatis marginibus setaceo-serratis, pedunculis subtribus unifloris, cornu pedunculum subæquante.

Impatiens setacea, COLEBR. MSS. *ined.*

Stem herbaceous, procumbent, diffuse, four-angled, jointed, coloured.

Leaves opposite, nearly sessile, linear-lanceolate, cordate at the base, distantly serrulate, with the serratures terminated with a bristle, upper surface wrinkled, lower one smooth.

Peduncles two, or generally three, in the axil of each upper leaf, and considerably more than half as long as the leaves, erect, slender, single-flowered. *Bracteas* subulate. *Flowers* large, lilac-coloured. *Calyx* of two subulate, opposite leaflets (*a*, *a*). *Petals* 4, unequal, ringent: the upper one (*b*) roundish, vaulted, acute; the two inner ones (*c*) half ob-ovate, appendiculate at the base on the outside: the lowermost one a spur or nectary, horn-shaped or subulate, hollow, and nearly equalling the peduncle in length. *Capsule* ovate, acuminate, curved, with five furrows.—(*Colebr.*)

For the drawing and description of this plant I am indebted to H. T. COLEBROOKE, Esq. who mentions further that it comes from the Kerrera Mountains, north of Sylhet, that it bears flowers in the rainy season, and ripens its seed soon after.

A plant of such beauty would be a great acquisition to our gardens, and we hope that ere long it may find a place there.

Fig. 1. The parts of the flower represented separately and slightly magnified.

Pholidota imbricata

PHOLIDOTA IMBRICATA.

Imbricated Pholidota.

GYNANDRIA MONANDRIA.—NAT. ORD. *ORCHIDEÆ.*
PHOLIDOTA, *Lindl.* MSS.

GEN. CHAR.—*Flores* resupinati. *Petala* subconformia, 3, exteriora erecto-patentia, dorso carinata. *Labellum* ventricosum, trilobum. *Columna* apice dilatata. *Anthera* bilocularis, persistens; *Massæ pollinis* 2 in singulo loculo, basi glandula unitæ.

Cymbidium imbricatum, CAREY, MSS.
Wellia, Thecka maravara, RHEEDE, *Hort. Malab.* v. xii. p. 147. t. 24.

Parasitic. *Root* a few simple or branched fibres. *Stems* short, clustered, when young subcylindrical, and clothed with sheathing large scales, brown and membranaceous at the border, in the old plant constituting a rather large, ovato-oblong, subtruncated and sulcated fleshy bulb, partially clothed with the old scales: at the summit bearing only a single broadly lanceolate, acute, erect, striated *leaf*, attenuated and convolute at the base, somewhat waved at the margin.

From the extremity of the stem, and within the convoluted base of the leaf, arises the solitary flower-stalk, almost a foot in length, slender, pendent, naked, having at the extremity a long, crowded, distichous spike of flowers, which, in the state of bud, are so closely imbricated and concealed with the ovate bracteas, that the spike bears an apt resemblance to the tail of some species of serpent. When the flowers expand, the bracteas are more apart, the spike becomes much longer, and the flowers are protruded, of a dingy yellow brown or tawny colour.

The *petals* are nearly equal in size, ovate, subconnivent, the three outer ones broad, very concave, and keeled at the back, the two inner ones smooth, slightly concave. *Lip* equal in length with the petals, standing forward, of a roundish figure, remarkably ventricose, gibbous at the base, 3-lobed, lateral lobes erect, intermediate one reflexed and subtrifid, its colour paler than the petals. *Column* white, rather shorter than the petals, oblong, dilated upwards, and subcucullate. *Anther* fixed just below the summit in front, dark brown, 2-lobed, 2-celled, each cell opening transversely, and containing a double pollen-mass, united at the base by a granulated gland, each portion obovate, yellow.

Flowered in the stove of our Botanic Garden in May 1824, from plants gathered in Nepaul, and sent by Dr WALLICH. I had scarcely made the accompanying design, when specimens in blossom of the same species were communicated to me by Mr SHEPHERD, from the garden of Mr JOSEPH COOPER, near Liverpool. Plants had been sent both to Mr COOPER and to Mr SHEPHERD from Nepaul, by Dr CAREY, the latter having received it with the name of *Cymbidium imbricatum*.

From the account which I gave of this highly curious parasite to Mr LINDLEY, he informed me that it probably belonged to his MS. genus *Philodota*, a name which I here adopt, and have drawn up characters to suit the plant, without having the advantage of Mr LINDLEY's distinguishing marks. The structure of the inflorescence is indeed very unlike that of any of the same family with which I am acquainted.

The figure quoted in the *Hortus Malabaricus*, is so characteristic, that I can feel no hesitation in referring it to this individual, so that its geographical range in India is probably considerable. Its medical virtues are by RHEEDE, like those of most of his plants, greatly extolled: even the very roots, pounded and applied to the shaved head, are said to cure fevers. The same author avers, moreover, that it always partakes of the same properties with the tree on which it is a parasite.

Fig. 1. Spike of young flowers. Fig. 2. Side view of a single flower. Fig. 3. Front view of the same. Fig. 4. Column and lip. Fig. 5. Front view of the column. Fig. 6. Anther. Fig. 7. The same with the valves open. Fig. 8. Back view; and, Fig. 9. Front view of the two double pollen-masses.—*All magnified.*

Diospyros vaccinioides

John Lindley Esqr. delt.

J. Swan lith.

DIOSPYROS VACCINOIDES.

Vaccinium-like Diospyros.

POLYGAMIA DIŒCIA.—NAT. ORD. *EBENACEÆ, Juss. Br.*

GEN. CHAR.—*Flores* polygami. *Calyx* profunde 4 (nunc 3- vel 6-) fidus. *Corolla* urceolata, 4 (nunc 3- vel 6-) fida.

MASC. *Stam.* basi corolla inserta, ejusdem laciniis dupla. *Filamenta* duplicata. Rudimentum pistilli.

HERMAPHR. FŒM. *Stamina* effœta, pauciora. *Ovarium* 8–12 (nunc 3-) loculare, loculis monospermis. *Bacca* globosa, calyce patente demum reflexo.—BR. *in Prodr. Fl. Nov. Holl.*

Diospyros *vaccinoides* ; foliis ovatis obtusis nitidis margine subtusque villosis, floribus solitariis quadrifidis, fructu triloculari.

D. vaccinoides, LINDLEY, MSS.

A small, erect, twiggy, shining-leaved, evergreen *Shrub,* with flexuose branches ; the older ones glabrous, the younger ones with reddish hairs. *Leaves* alternate, ovate, exstipulate, shining, obtuse, plane, nearly nerveless, glabrous above, the margins and midrib beneath, as well as the short petiole, clothed with reddish hairs.

Flowers axillary, solitary, nearly sessile, with a small bracteiform scale. *Calyx* inferior, quadrifid, with the segments subulato-ovate, as long as the corolla, the margins coloured, and pilose with red hairs. *Corolla* (female plant) monopetalous, hypogynous, subcampanulate, white, quadrifid, the segments ovato-acuminate, patent, glabrous, having a line of red hairs running down the back of each. *Stamens* 4, inserted at the base of the corolla, and alternate with its segments, sterile, included, appressed to the pistil. *Filaments* filiform, plane. The rudiments of the anthers and continuation of the filament, purple, ovate, rough at the margin. *Germen* globose, 3-celled, 3-seeded ; *Ovules* pendulous. *Style* trifid, hairy, the lobes appressed. *Stigmas* quite simple.—*Lindl.*

Introduced by Mr POTTS from China in 1823, to the garden of the Horticultural Society of London, where Mr LINDLEY made the above description, and the design from which the accompanying plate was engraved. It flowered in the

month of May of the following year, in the stove; but all the blossoms had imperfect anthers, and we are as yet unacquainted with the ripened fruit.

I can by no means satisfy myself whether this plant should be referred to *Diospyros*, or to *Maba*, with which latter genus Mr LINDLEY justly observes that it has many important points in common, especially with the *Maba buxifolia*, (*Ferreola*, ROXB. et WILLD.) which is fully described in ROTH's *Nov. Sp. Pl. Ind. Or.*, and with the *M. obovata* of BROWN's Prodromus. From *Diospyros* it differs in the number of cells in the germen, which, in the present individual, are 3, not 8–12; and from *Maba* in the calyx and corolla having 4, not 3, divisions, and in the cells of the germen containing only 1, not 2, ovules. Again, it comes near to the character given by Mr BROWN of his genus *Cargillia*, which, he says, holds a middle rank between *Diospyros* and *Maba*, but of which one of the essential peculiarities is to have the germen with 4 cells, and the cells with 2 seeds.

Fig. 1. Flower. Fig. 2. Inner view of a corolla. Fig. 3. Abortive stamen. Fig. 4. Pistil. Fig. 5. Vertical section of the same, shewing the ovules. Fig. 6. A single leaf, (natural size).—*All but* Fig. 6. *more or less magnified.*

Anthemis arvensis

ŒNOTHERA SERRULATA.

Serrulated-leaved Evening Primrose.

OCTANDRIA MONOGYNIA.—NAT. ORD. *ONAGRARIÆ.*

GEN. CHAR.—*Calyx* quadrifidus, tubulosus. *Petala* quatuor. *Capsula* quadrilocularis, quadrivalvis, cylindrica, infera. *Semina* nuda.—*W.*

Œnothera *serrulata*; foliis linearibus spinuloso-serratis acutis, floribus axillaribus solitariis, calycis foliolis carinatis, stigmate quadrilobo, capsula cylindracea.

Œ. serrulata, NUTTALL's *Gen. Amer. Pl.* v. i. p. 246.—NUTT. *in Journ. Acad. Nat. Sc. Phil.* v. iii. p. 120.

"A low, perennial, suffruticose plant," (NUTT.) *Stem* and *branches* slender, terete, reddish, scarcely pubescent. *Leaves* alternate, 3 or more inches long, linear, tapering at the base, and acuminated at the point, glabrous, single-nerved, spinuloso-serrate.

Flowers solitary, of a moderate size; measuring about an inch and a half in diameter when fully expanded. *Calyx* funnel-shaped, yellowish, with 4 acute, at length reflexed, ovate, deeply carinated, lobes. At the base of these lobes, within, and forming, as it were, a continuation of the upper part of the funnel-shaped portion of the calyx, are the 4 roundish, bright yellow, remarkably crumpled and rather spreading petals. *Stamens* 8, alternately shorter, with very short filaments, and linear-oblong yellow *Anthers*. *Germen* inferior, linear, obtusely 4-angled, green, slightly pubescent. *Style* much shorter than the corolla. *Stigma* peltate, deep brown, 4-lobed.

Discovered by Mr NUTTALL on the summits of hills, in the plains of the Missouri, and of the Red River, and first cultivated in the garden of the University of Pennsylvania, whence seeds were kindly communicated to our garden by Mr MURRAY. We have kept it in a pot in the open air, occasionally giving it the shelter of a frame.

Mr Nuttall has correctly observed, that the flowers of this species expand in the morning, and that it is remarkable for the structure of its calyx, the arrangement of its stamens, and for its almost undivided stigma.

Fig. 1. Flower, *natural size.* Fig. 2. The same, with the corolla and tube of the calyx cut open, to shew the style, stigma, and stamens. Fig. 3. Stamen. Fig. 4. Germen.—*All more or less magnified.*

Impatiens trilobata

I. Swan. Sculpt. Mixer

IMPATIENS TRILOBATA.

Three-lobed Balsam.

PENTANDRIA MONOGYNIA—NAT. ORD. *BALSAMINEÆ, Rich. De Cand.*

GEN. CHAR.—*Antheræ 5,* nempe 3 biloculares, 2 ante petalum superius 1-loculares. *Stigmata 5,* coalita. *Capsula* prismatico-teretiuscula, elongata, valvis a basi ad apicem extrorsum revolutis. *Cotyledones* planiusculæ.

Pedunculi *axillares, remoti, multiflori.* Capsulæ *glabræ.* Folia *alterna.*—DC.

Impatiens *trilobata;* umbellis quadrifloris longitudine foliorum, foliis late-lanceolatis serratis, nectario conico acuminato curvato.

Impatiens trilobata, COLEBR. MSS.

Stem herbaceous, erect, quadrangular. *Leaves* opposite, decussate, petioled, broadly lanceolate, tapering at both ends, smooth, serrulate, about 3 inches long, and less than one inch broad. *Peduncles* axillary, solitary, half the length of the leaf, bearing a 4-flowered umbel. *Pedicels* shorter than the peduncle.

Perianth 2-leaved; leaflets lanceolate, placed as bracteas by the sides of the flowers. *Petals 3,* unequal; the upper one roundish, vaulted, pointed at the summit; the two lower ones 3-lobed; exterior lobe much larger; interior one minute, yellow; middle one oval, reddish. *Nectary* ample, cucullate, pointed at the top, and terminated behind with an incurved horn. *Capsule* oblong, curved, 5-furrowed.

For the drawing and description of this plant, I am indebted to Mr COLEBROOKE, who found it a native of Sylhet, in the East Indies, where it flowers towards the beginning of the cold season.

Fig. 1.

Dendrobium album

DENDROBIUM ALBUM.

White single-flowered Dendrobium.

GYNANDRIA MONANDRIA.—NAT. ORD. *ORCHIDEÆ.*

GEN. CHAR.—*Labellum* ecalcaratum, articulatum cum apice processus unguiformis, cujus lateribus petala antica adnata, calcar æmulantia. *Massæ pollinis* 4, parallelæ.—*Br.*

Dendrobium *album*; bulbis ellipticis compressis apice uni-trifoliis, pedunculis unifloris erectis, petalis sublanceolatis, labello oblongo obscure trilobo, medio tuberculo oblongo carnoso.

Parasitic: Root a few simple zig-zag fibres. *Bulbs* clustered, about 2 inches long, elliptical, compressed, fleshy, green, having some large, brown, membranous scales at the base, and bearing at the extremity from 1 to 3 linear, subacute, rather fleshy dark green leaves, complicate at the base, spreading, slightly keeled at the back, and furnished with a midrib.

Flowers solitary, erect, upon a short, upright peduncle, arising from a scaly sheath at the base of the bulbs. *Petals* erect, or slightly recurved at the point, white, ovato-lanceolate, nearly equal in size, the three outermost connected together at the base, and of them the two foremost forming a kind of double sack or pouch by their union. *Lip* almost equal in length to the petals, erect, yellowish-white, grooved, imperfectly 3-lobed, lateral lobes very small, the central one slightly recurved, and having a large, yellow, oblong tubercle near the centre. *Column* linear-oblong, united at the base behind, with the petals plane in front, having the quadrangular concave *stigma* near the top. At the extremity is placed the deciduous *anther*, operculiform, conical, imperfectly 2-celled, and having 2 pairs of yellowish-white, waxy *pollen-masses*, of which the inner lobes are the smallest. *Germen* very long, pedunculiform, striated, quite straight.

From the stove of the Liverpool Botanic Garden, where it was received by Messrs SHEPHERD from Jamaica, through the favour of Mr WILES.

I am unable to find any description which agrees with the character of this plant, and have thus been induced to give it a name expressive of the almost pure white hue of its blossoms.

Fig. 1. Front view of a flower. Fig. 2. Flower, with the petals and lip spread back. Fig. 3. Anther-case. Figs. 4, 5. Pollen-masses.—*All more or less magnified.*

Bromelia nudicaulis

BROMELIA NUDICAULIS.

Leafless-stalked Bromelia.

HEXANDRIA MONOGYNIA—NAT. ORD. *BROMELIÆ.*

GEN. CHAR.—*Calyx* 3-fidus. *Petala* 3; *Squama* nectarifera ad basin petali. *Bacca* trilocularis.—*W.*

Bromelia *nudicaulis*; foliis lato-lineari-lanceolatis obtusis mucronulatis spinuloso-serratis, scapo tomentoso infra squamoso, squamis lanceolatis convolutis integerrimis coloratis, spica elongata.

B. nudicaulis, LINN. *Sp. Pl.* p. 409.—WILLD. *Sp. Pl.* v. 2. p. 9, (not of *Bot. Reg.* t. 203. which is B. pyramidalis *Bot. Mag.*)

Bromelia pyramidata aculeis nigris, PLUM. *Gen.* t. 62.

Stem none. *Leaves* often 2 feet long, numerous, ligulate, of a rather thick and remarkably coriaceous texture, their colour dark lurid green, herveless, edged with sharp black teeth pointing forwards, recurved upwards, convolute at the base, there forming a tube, which is filled with water.

Scape a foot and a half, or more, in length, rounded, whitish, covered with a thin, soft wool or down, and partly clothed, especially in the upper part, with broadly lanceolate, convolute, deep rose-coloured scales or bracteas, whitish on the lower part of the scape, acuminated at the point.

Spike terminal, subpyramidal, simple, destitute of leaves. *Flowers* rather distantly inserted, spreading, ovato-acuminate, with a small, red, closely appressed bractea at the base. The inferior part is occupied by the large, ovate, green, pubescent, 3-celled, many-seeded germen. *Calyx* superior, of 3 erect, rigid, oblong, yellow-green, glabrous leaflets, uniconate at the point, their margins oblique and somewhat convolute. *Corolla* of 3 linear, oblong, yellow, upright petals, oblique at the extremity, scarcely unguiculate, each bearing a stamen, which is inserted near its base, and having, just above this point of insertion, a small fringed nectary or double scale. *Stamens:* 3 inserted upon the receptacle, and 3 upon the petals, shorter than the petals. *Filament* slender. white. *Anthers* connate over the stigma, oblong, 2-celled, pale yellow. *Style* filiform, green. *Stigmas* 3, small, twisted, green.

This fine plant flowered, probably for the first time in Britain, during last year (1823), at the Botanical Garden of Liverpool. Again, this year, it has produced a noble spike of blossoms, a representation of which, through the kindness of my friends Messrs SHEPHERD, I have now the pleasure of laying before the public.

A comparison of this figure with the one above quoted of PLUMIER, will show that no reasonable doubt can be entertained of its being intended for the same plant, and consequently, that it is the figure referred to by LINNÆUS and WILLDENOW as the true *Bromelia nudicaulis*. The individual represented in the Botanical Register is the *B. pyramidalis* of SIMS, in the Botanical Magazine; and the latter author quotes, with a mark of doubt, the synonyms of LINNÆUS, WILLDENOW and PLUMIER.

This plant was received at Liverpool from Trinidad, by favour of the Baron DE SCHACK, from whom likewise we have individuals in our garden, which have not as yet flowered.

Fig. 1. Single flower. Fig. 2. The same deprived of the calyx. Fig. 3. Petal with its stamen. Fig. 4. Stamen from the receptacle.—*All more or less magnified.*

Renora purpurea

ROSCOEA PURPUREA.

Purple Roscoea.

MONANDRIA MONOGYNIA.—NAT. ORD. *SCITAMINEÆ.*

GEN. CHAR.—*Anthera* biloba, incurva, terminalis, stylum vaginans, basi bicalcarata. *Corolla* ringens, limbo duplici. *Calyx* monophyllus, tubulosus.

Roscoea *purpurea;* spica foliorum vaginis obvoluta, calyce obliquo integro. *Sm.*

R. purpurea, SM. *Ex. Bot.* p. 97. t. 100.

Root (according to SMITH) consisting of several clustered, oblong, tapering knobs, producing branched fibres. *Stem* erect, nearly a foot high, simple, leafy, terete, clothed with the striated sheathing bases of the leaves. *Leaves* lanceolate, spreading, distichous, waved, with a central midrib and many parallel oblique nerves, pale green.

A cluster of flower-buds is produced within the sheathing base of the upper leaves, but only one is expanded at a time. Each has a triangular, oblong, pale green, 3-celled, inferior *germen.* A tubular, membranaceous *spatha,* similar to a calyx or outer corolla, arises from the top of the germen, opening laterally from the summit, and sheathing almost the whole of the tube of the corolla. *Corolla* of a purple rose-colour, 4–5 inches in length, consisting of 6 divisions, 3 outer and 3 inner, each bilabiate, united below into a long filiform white tube. Of the 3 outer divisions, the segments are lanceolate, the upper one is erect, very hollow and carinate, compressed, the margin much revolute, the extremity a rather sharp white point; the two lower are bipartite, reflexed and pale: the 3 inner ones very unequal, the 2 upper ones erect, hatchet-shaped, and forming a sort of hood or helmet to the anther and stigma, pale; the lower one, very large, clawed, rotundate, subplicate, obscurely 3-lobed, its central lobe very spreading, emarginate at the point. There are a few deep purple streaks at the top of the claw, which gradually disappear in the lamina. *Filament* linear, grooved. *Anther* with a 2-horned white appendage at the base, curved, oblong, yellowish, 2-celled, emarginate at the top for the reception of the stigma. *Style* very long, filiform, passing through the tube of the corolla and the groove of the filament and anther, and terminating in the globular perforated stigma at the top of the anther. This *stigma* is slightly pubescent, and ciliated at the margin of the perforation.

For the acquisition of this elegant plant, which flowered in August 1824, our garden is indebted to the sister establishment of Edinburgh, and few inmates of the stove are possessed of greater recommendations, either with regard to the beauty or the durability of their inflorescence than the *Roscoea purpurea*, for its blossoms are singularly large and shewy; and though they are produced singly, and each continues in perfection but for one day, yet there is a considerable number, and a long succession of them.

Exactly similar to the present species, is an individual which I received under the name of *Roscoea speciosa* from Liverpool, where it flowered in 1822. The two plants differ remarkably from the figure given of the flower of *Roscoaa purpurea* in Exotic Botany, the lower lip of the corolla, both in the dried specimen and living plant being twice or thrice as large and recurved, and the whole blossom of a much deeper and bluer colour. These dissimilarities I conceive to be attributable to inaccuracy in the draftsman; for in a native specimen which Sir J. E. SMITH has been so kind as to give me of his *R. purpurea*, I find the corolla to be like the one here represented. The only point in which it differs is, that the sheathing bases of the leaves wherein its flowers are contained, are much larger and more swollen, probably owing to the greater number of flower-buds produced by an indigenous plant, and also that the upper leaves themselves are considerably shorter, and more like bracteas.

Fig. 1. Flower, deprived of the segments of the corolla; *a*, Style. Fig. 2. One of the upper segments of the inner corolla. Fig. 3. Stamen; *a*, The canaliculated filament; *b*, The two horn-like processes at the base of the anther; *c*, Anther. Fig. 4. Transverse section of the germen. Fig. 5. Stigma.—*All more or less magnified.*

F. Swan Sculpt. Glasgow

Habenaria orbiculata

HABENARIA ORBICULATA.

Round-leaved Habenaria.

GYNANDRIA MONANDRIA.—NAT. ORD. *ORCHIDEÆ.*

GEN. CHAR.—*Corolla* ringens. *Labellum* basi subtus calcaratum. *Glandulæ pollinis* nudæ distinctæ (loculis pedicellorum adnatis vel solutis distinctis).—*Br.*

Habenaria *orbiculata;* labello lineari-lanceolato, petalis 3 superioribus erectis conniventibus lateralibus reflexis, anthera triangulari mutico, foliis binis suborbicularibus.

Orchis orbiculata, PURSH, *Fl. N. Am.* v. 2. p. 588.

Root consisting of a few large subfusiform, thick, fleshy fibres. *Leaves* two, large, spreading, arising from the root, nearly orbicular, bright green, somewhat fleshy, indistinctly nerved, very obtuse. *Scape* about a foot high, simple, many-angled, naked, glabrous, terminated by a lax spike, from 4–6 inches in length, of yellowish-green, erecto-patent *flowers*. *Bracteas* lanceolate, nearly as long as the flowers. The three uppermost *petals* connivent, and including the anther, ovato-acuminate; the outermost ones the largest, green, the innermost rather shorter and yellower: the two lateral petals remarkably reflexed, so as almost to meet at the back, and to embrace the base of the spur and top of the bractea, their form is between ovate and lanceolate, and their colour green. *Lip* half as long again as the petals, linear-lanceolate, entire, yellow-green, standing forward and incurved, the margins often reflexed; its base prolonged into a spur, which is considerably longer than the germen, whitish, and hanging downwards. *Anther* large, green, triangular, the angles obtuse, cells distantly placed, linear-clavate, their bases much apart. *Pollen-masses* clavate, yellow, their glands standing out naked beyond the base of the cells. *Stigma* green, viscid. *Germen* $\frac{3}{4}$ of an inch long, twisted.

For the introduction of this highly interesting plant to Europe, we are indebted to the Right Honourable the Countess of DALHOUSIE, who, with a liberality and kindness that I am proud to acknowledge, immediately upon receiving an application which had been made to her Ladyship for Canadian plants, sent to our Botanic Garden some boxes well stored with bota-

nical rarities, especially Orchideæ, from the vicinity of Montreal. These cases were, upon their arrival in autumn 1823, placed by our able curator, Mr MURRAY, in a frame, into which the air was freely admitted during the winter and spring, and early this summer they have presented such a spectacle of rare American orchideous plants in blossom, as, except in their native places of growth, there has perhaps hardly ever been witnessed.

Hitherto PURSH is the only author who has described this species of *Habenaria*, although NUTTALL speaks of it as an inhabitant of the Alleghany Mountains, of Pennsylvania, and the banks of Lake Erie. The range of this plant's growth extends, therefore, from Virginia to Canada, from which latter country I have also received dried specimens of it from MrCLEGHORN and Mr GOLDIE. From New York, too, the plant has been transmitted to me through the kindness of Dr TORREY, and from Boston by F. BOOTT, Esq. It may surely, therefore, be reckoned among the more common species of this family in North America: indeed, it is so well known that PURSH states the inhabitants to be generally acquainted with it under the name of *All-heal.*

The species most nearly allied to the present individual, is the very fine plant which Mr GOLDIE discovered in the island of Montreal, and which is described under the name of *Habenaria macrophylla* in Mr GOLDIE's "Account of new and Rare plants detected in Canada during the year 1819," in the 6th volume of the Edinburgh Philosophical Journal.

It is with much surprise I find that my friend Dr TORREY of New York, in a letter which he had the goodness to write to me upon the subject of Mr GOLDIE's paper, considers the *H. macrophylla*, of which he judges of course only by the description, to be the same with the *H. orbiculata* of PURSH, notwithstanding that the differences between these two plants are fully and satisfactorily pointed out in the Memoir in question. It will suffice here to mention, that the *H. macrophylla* is twice the size of the present individual in almost all its parts; and that the anther is at each angle at the base, prolonged into a projecting horn.

Should I not succeed in my expectation of obtaining *H. macrophylla* in a living state from Canada, I shall undoubtedly publish a figure of it from some well preserved specimens in my herbarium, which have been given to me by Mr GOLDIE.

Fig. 1. Front view of the Anther, with the three upper petals and lip.
Fig. 2. Pollen-mass, *magnified.*

Impatiens fimbriata

J. Swan Sculpt. Glasgow

IMPATIENS FIMBRIATA.

Fimbriated Balsam.

PENTANDRIA MONOGYNIA.—NAT. ORD. *BALSAMINEÆ, Juss. De Cand.*

GEN. CHAR.—*Anthera* 5, nempe 3 biloculares, 2 ante petalum superius 1-loculares. *Stigmata* 5, coalita. *Capsula* prismatico-teretiuscula, elongata, valvis a basi ad apicem extrorsum revolutis. *Cotyledones* planiusculæ.

Pedunculi *axillares, remoti, multiflori.* Capsulæ *glabræ.* Folia *alterna.*—DC.

Impatiens *fimbriata;* racemo terminali capitato, foliis ovali-lanceolatis acuminatis longe ciliatis, nectario corniculato florem excedente, bracteis pulcherrime ciliatis.

Stem herbaceous, erect. *Leaves* opposite, petioled, obliquely lanceolate; acuminate, serrate, hairy at the serratures, polished, 4–5 inches long, an inch and a half broad. *Petioles* flat above, round beneath.

Racemes terminal, borne upon long peduncles, dense, subglobular, many-flowered. *Peduncles* quadrangular, straight, of nearly the same length as the leaves. *Pedicels* round, slender, straight, longer than the flowers. *Bracteas* linear-lanceolate, fringed with numerous, long, purple threads. *Flowers* violet. *Perianth:* two small, falcate leaflets, placed as bracteas by the sides of the flower. *Petals 3,* unequal: the upper one roundish, vaulted, pointed at the top: the two lower ones larger, more beautiful, gibbous. *Claws* appendaged by a round lobe on the outer side, which may be considered as smaller, lateral confluent petals. *Nectary* ample, cucullate, pointed at the top, terminating behind in a very long, slender, incurved horn.—*Colebr.*

Native of the mountains of Sylhet, where it flowers in May. It is well distinguished from any other species by its dense and purple racemes of flowers, and their beautifully fringed bracteas. Whether it should rank with the genus *Impatiens* or *Balsamina* of DE CANDOLLE, I am unable to decide.

Discovered by Mr COLEBROOKE.

Parkeria pteridoides.

PARKERIA PTERIDOIDES.

Pteris-like Parkeria.

CRYPTOGAMIA FILICES.—Nat. Ord. *PARKERIACEÆ.*

Capsulæ sphæricæ, uniloculares, membranaceæ, *exannulatæ*, indehiscentes, intus seminibus majusculis repletæ. *Sori* dorsales, venis longitudinalibus, costæ parallelis inserti, marginales, continui. *Indusium* e margine frondis continuum, intus liberum. —Plantæ *aquaticæ.* Radices *e basi frondium longæ, ramosæ, tomentosæ.* Frondes *dichotome divisi, ramis fructificantibus linearibus, venis longitudinalibus, paululum anastomosantibus.* Vernatio *circinnata.* Habitus *Pteridis sed capsulæ valde dissimiles.*

Gen. Char.—Idem ac *Char. Ord.*

Parkeria *pteridoides*; frondibus uniformibus.

Aquatic. The *roots* long, penetrating deep into the mud, branched, and downy with numerous small, black, scale-like processes. *Plant* from 8 inches to a foot in height. *Stipes* 4 or 5 inches long, stout, cylindrical (?), obscurely striated, furnished with a few small brownish scales, and often throwing up from the base a young circinnate frond. *Frond* subtriangular in its circumscription, bipinnatifid, the segments linear, once or twice dichotomous, the ultimate ramuli rather acute. The anterior side of the frond is slightly convex, marked with about 3 longitudinal continuous nerves, which here and there anastomose; the posterior side is nearly plane.

Involucre, or *Indusium*, formed by the involute margin of the frond, which is thin, membranaceous, and reticulated. In the older and broader parts of the frond there is a rather considerable space in the centre, between the margins of the involucre (Fig. 2.); but in the ultimate branches, where the frond is narrower, the margins of the involucre almost meet in the centre, (Fig. 4.) These *involucres* cover and conceal the *sori* or clusters of fructification, which are inserted continuously upon the veins. *Capsule* large in proportion to the size of the plant, spherical, thin, membranaceous, with numerous swellings caused by the *seeds* within, almost transparent, sessile, of a brownish colour. Within, they contain numerous, rather large, spherical, or frequently angular, pale brown *seeds.*

The general appearance of this curious fern, impressed me with the opinion that it belonged to the genus *Pteris*; a more accurate examination subsequently demonstrated, not only that its structure was incompatible with the characters of that genus, but also that it was equally at variance with the definition of the Natural Order *Filices.* It is essential to the true Ferns, to possess a capsule which opens either with a regular fissure, or by means of an elastic annulus, and no appearance of that kind is discoverable in the individual before us.

As a new genus, then, I have the utmost pleasure in dedicating this plant to its discoverer C. S. Parker, Esq. of Blo-

chairn, near Glasgow, a gentleman who, imbibing an early taste for botany under the celebrated DE CANDOLLE at Geneva, has continued to pursue the study with great zeal; and during an excursion which he lately made through the British settlements at Guaiana, collected a rich and abundant harvest of plants. These have been consigned to me, with a liberality that demands my warmest acknowledgments, together with numerous descriptions, made from living individuals, chiefly of those belonging to the tribe of *Palms*. Among his choice collection, are many specimens of the Fern now under consideration, in an excellent state of preservation.

The nature of the capsules of this plant, and their situation, require that a new Order in the Class *Cryptogamia* should be established for it, and I have named it after the only genus that is at present known to belong to the family. Perhaps its place should be near *Marsileaceæ* of BROWN.

The East Indian *Pteris thalictroides* of SWARTZ and WILLDENOW (*Acrostichum*, L.), has unquestionably many points in common with this plant, and it is equally of aquatic origin: but the fructification is nowhere described with sufficient accuracy to enable me to speak satisfactorily upon the point of their affinity, and I have not had the opportunity of seeing specimens. I cannot, however, help expressing it as my opinion, that *P. thalictroides* * will rank in the same genus with the present subject of our consideration. As a species, it may be distinguished by its having sterile fronds, different from the fertile ones: whereas in all the specimens of *Parkeria pteridoides*, the fronds are alike.

Another plant, allied to this, is the *Pteris cornuta* of PALISOT DE BEAUVOIS' *Flore d'Oware et de Bénin*, p. 62. t. 37. That author, however, both describes and figures the capsules as furnished with an annulus, and having seeds quite different from those of *Parkeria*. This grows in salt-water pools on the coast of Africa.

Mr PARKER finds the present fern in fresh-water ditches, in the district of Essequibo.

Fig. 1. Portion of the frond. Figs. 2. & 4. Under side of a portion. Fig. 3. Back view of ditto. Fig. 5. Under side, with the involucre laid open, to shew the situation of the capsules. Fig. 6. Capsules. Fig. 7. Capsule torn open. Fig. 8. Seeds.—*All more or less magnified.*

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* This is mentioned by Mr BROWN, Prodr. Fl. Nov. Holl. p. 154. as constituting a new genus; and, since the above was printed, I find that, in *Franklin*'s *Journal*, APP. under the article *Cryptogramma*, Mr BROWN has called it *Teleozoma*, and assigns to it "*Capsulæ sessiles, annulo completo latissimo.*" Hence, however closely these two genera, *Cryptogramma* and *Teleozoma*, may be allied to our plant in habit, they are essentially different in the structure of the fructification.

Pachysandra? coriacea

J. Swan Sculp.t Paris

PACHYSANDRIA? CORIACEA.

Nepaul Pachysandra.

MONŒCIA TETRANDRIA.—NAT. ORD. *EUPHORBIACEÆ.*

GEN. CHAR.—MASC. *Cal.* 4-phyllus. *Cor.* 0. FŒM. *Cal.* 4-phyllus (vel e squamis imbricatis). *Cor.* 0. *Styli* (2 vel) tres. *Caps.* (bi-) trilocularis. *Sem.* 2.—*Willd.*

Pachysandra? *coriacea;* arborescens glabra, foliis ovato-lanceolatis longe acuminatis subcoriaceis integerrimis floribus fœmineis digynis.

A tall (?) *shrub,* with the *stems* and *branches* rounded, smooth, glabrous, somewhat shining. *Leaves* alternate, distant, placed upon a petiole, which is grooved above, and about an inch long; ovato-lanceolate, much acuminated, glabrous, somewhat shining, quite entire, dark green above, scarcely nerved, beneath paler, rather more evidently nerved, faintly 3-nerved at the base.

Flowers, from the younger branches, placed in short, scarcely pedunculated, solitary spikes, in the axils of the leaves: at the base of the spike are two or thre *female* flowers; the rest are *male.*

Male flower: *Perianth* 4-partite, segments ovate, erecto-patent, pale green; surrounded at the base with 3–5 imbricated, ovate, pale green scales. *Stamens* 4, hypogynous, opposite to the segments of the *Perianth. Filaments,* when arrived at their full growth, twice as long as the perianth, broad, flat, whitish, erecto-patent, at length patent. *Anthers* oblong, at first yellow; *cells* almost opposite, much grooved at the suture: after the discharge of the yellow pollen, they become brown and recurved. *Pistil* none, only a truncated gland.

Female Flower: a small, ovate, green, scaly bud or catkin; the scales ovate, slightly acuminated, and ciliated at the margin. True *perianth* none. *Stamens* none, not even the rudiments of them existing. *Pistil* solitary. *Germen* oblongo-ovate, green, 2-celled, cells each with a single ovule; terminating in two recurved sessile, whitish stigmas, which are papillose in the upper surface.

A native of Nepaul, whence I have received fine dried specimens from my inestimable friend Dr WALLICH. The opportunity of figuring this species from a living individual, I owe

to Mr AITON, who has enriched our Botanic Garden with some of its choicest plants. It was sent to Kew, and probably to other gardens in England, marked *Prunus Puddum*, a name that can only have been applied to it in reference to the general habit of the tree or shrub, or to the appearance of its leaves, without the opportunity of an inspection of the flowers. These prove it to belong to the Natural Order *Euphorbiaceæ*, and are so closely allied in their structure, both the male and female blossoms, to the genus *Pachysandra*, that, except in the circumstance of the latter genus having 3 stigmas, and this plant only 2, I know of scarcely a difference. The stamens have the same dilated filaments, and a similar form of anther, and in both, the flowers are placed in axillary spikes. In the habit, however, a striking disparity is observable. *Pachysandra* is a low, creeping herbaceous plant, with deciduous leaves; whilst the present species forms a shrub, or probably, in its native country, a tree, with evergreen coriaceous leaves: so that it seems likely, that, when the fruit of this individual comes to be known, it will be found to constitute a distinct genus.

With the genus *Buxus*, the subject of the present plate quite agrees in the structure of its male flowers; but the pistil is considerably different, in its form and organization; and though the evergreen foliage may be thought to mark an affinity of habit, yet the nature of the leaves, and especially of their nervation, is widely different.

For the present, therefore, I shall place it in the genus *Pachysandra*, leaving it to Dr WALLICH, who has doubtless ere now seen its blossoms, and in all probability the perfect fruit, to form it into a new genus, if he deems it necessary, in his *Flora Indica*.

Fig. 1. Male flower. Fig. 2. The same, before the stamens have reached their full size. Fig. 3. Female flower. Fig. 4. Pistil. Fig. 5. Section of an anther.

Anisopetalon Careyanum. J. Swan Sculp.

ANISOPETALON Careyanum.

Dr Carey's Anisopetalon.

GYNANDRIA MONANDRIA.—Nat. Ord. *ORCHIDEÆ.*

Div. Anthera *mobilis decidua.* Massæ pollinis *demum cereaceæ*—Br.

Gen. Char.—*Flores* erecti. *Petala* subconniventia, exteriorum trium duobus anterioribus majoribus apice cohærentibus, duobus interioribus minimis subulatis. *Labellum* oblongum, prope basin bidentatum inferne gibbosum cum basi producta columnæ articulatum. *Massæ pollinis* 4, per paria approximatis, paribus inæqualibus.

Planta *parasitica.* Bulbi *subtetragoni unifoliati.* Scapus *radicalis;* flores *dense spicati.*

Anisopetalon *Careyanum.*

Root creeping, here and there producing bulbs rather larger than a pigeon's egg, obtusely 4-sided, thick, fleshy, of a paler colour than the leaves, and partially covered with a white deciduous nap or down, throwing out from below some white, simple fibres, and above producing a single, linear-lanceolate, thick, dark green *leaf.*

Scape springing from the base of the bulb, scarcely 3 inches long, with 3 or 4 brown, distantly-placed scales, and terminating in a dense oblong spike of flowers, about two inches in length, and which is altogether of a singularly dull and lurid brown, or chocolate colour. *Bracteas* lanceolate, shorter than the flower. *Flowers* erect, so that they cannot properly be called either resupinate or the reverse. The three outer *petals* subconnivent, quite erect, ovate, concave, dingy yellow, splashed with blotches of dull purple, the posterior one the smallest, free, the two anterior ones considerably larger, connivent at their back towards the extremity. The two inner petals very small, subulate, orange-yellow. *Lip* attached, and jointed upon, the extremity of the protruded base of the column, oblong, deep purple, very gibbous at the base below, glandular, with two lateral curved teeth near the base, one on each side; it stands vertically, is much shorter than the petals, and a little longer than the column. *Column* rather short, upright, orange-coloured, subcylindrical, with two rather long teeth, curved forward, one on each side at the extremity; between these is the deciduous, operculiform *Anther,* covering two pair of yellow, cereaceous *pollen-masses,* each pair having the inner portion or lobe the smallest. *Stigma* concave. *Germen* oblong, reddish, not twisted.

An inhabitant of Nepaul, and communicated by Dr CAREY of Serampore to the Botanic Garden of Liverpool, where it flowered in the stove in October 1824, and whence a specimen, with a sketch of the living plant, were sent to me by Mr H. SHEPHERD.

The structure of these flowers is highly curious; each, taken separately, having no inconsiderable resemblance, both in colour and form, to the spatha of the *Pothos violacea*.

Not being able to discover any already established genus at all corresponding with this plant, I have derived the present appellation from *ανισος*, *unequal*, and *πεταλον*, *the petal;* from the great disparity in the size of the inner and outer petals. This species is dedicated to the eminent individual to whom the Liverpool garden owes the introduction of it.

Fig. 1. Single flower. Fig. 2. Anterior petal. Fig. 3. One of the posterior petals. Fig. 4. Flower deprived of the three outer petals, shewing the two inner ones, the column and the lip. Fig. 5. Front view of the column, with the two inner petals. Fig. 6. Lip removed from Fig. 5. Fig. 7. Anther-case. Fig. 8. Pollen-masses.—*All more or less magnified.*

Cuscuta reflexa, var. verrucosa.

R. K. Greville del.

J. Swan Sc

CUSCUTA REFLEXA, var. *verrucosa*.

Warted East Indian Dodder.

PENTANDRIA DIGYNIA.—NAT. ORD. *CONVOLVULACEÆ.*

GEN. CHAR.—*Calyx* 5- raro 4-fidus. *Corolla* globoso-urceolata (vel campanulata) limbo 5-fido (plerumque) marcescens. *Ovarium* 2-loculare, loculis dispermis. *Capsula* bilocularis, circumscissa.

Cuscuta *reflexa;* digyna, stigmatibus subsessilibus divergentibus subulatis, corolla campanulata 5-dentata, laciniis reflexis, squamis fimbriatis.

Cuscuta *reflexa*, " ROXB. *Corom. Pl.* v. ii. No. 104."—*Fl. Ind.* v. i. p. 466.

β, verrucosa, pedunculis calycibusque verrucosis.

Cuscuta verrucosa, " SWEET's *Brit. Fl. Gard.*" t. 6.

Stem of great length, filiform, branched, leafless, succulent, climbing from left to right, shining, glabrous, greenish-white, spotted and dashed with purple, adhering parasitically by means of small, fleshy, discoid radicles. From various parts of the stems and branches proceed clusters, or compact panicles, formed of a more or less considerable number of large, pure white, waxy, and slightly pellucid, fragrant *flowers*, the smell of which somewhat resembles that of the primrose.

Peduncles and *pedicels* sprinkled with many elevated, shining dots or warts, of a deep purple colour. *Bracteas* 2 or 3 on the pedicels, or at the base of the calyx, small, ovate. *Calyx* of 5 fleshy, white or pale rose coloured, ovate, obtuse, appressed, warted segments, quite inferior, and not at all adhering to the germen, persistent. *Corolla* deciduous, campanulate, or very slightly contracted at the mouth, 5-toothed, the teeth reflexed, at the base of which, on the inside, are 5 short, fringed scales. *Anthers* 5, sessile, placed just within the corolla, and alternating with its segments, oblong, yellow: beneath them is an elevated line, running down to the back of each scale. *Germen* rotundato-ovate, tipped with the two, nearly sessile, subulate, white *stigmas*. Young *capsules* 2-celled, each cell 2-seeded. Fully formed *capsules* the size of large peas, terminated with the style and stigmas, spherical, membranaceous, opening all round transversely near the base, imperfectly 2-celled; the dissepiment membranaceous, free: each cell 2-seeded; one or sometimes both in a cell not unfrequently abortive. *Seeds* attached to the base of the cells, erect, rotundate compressed. *Albumen* copious, between fleshy and corneous. *Embryo* filiform, long, spirally rolled up, and immersed in the albumen.

I have not had an opportunity of seeing the figure above quoted, of SWEET's *Cuscuta verrucosa*; but my friend Dr GRAHAM, from whose accurate notes I have extracted most of the above description, informs me, that, although differing in some respects from our plant, he yet believes them to be the same. *That* came from Nepaul. The present individual flowered in the Botanic Garden at Edinburgh, in November 1824, having been raised from a lot of various seeds gathered in the low grounds about Madras, in the Mysore, and on the Coromandel coast, by Dr SHORTT. But from which of these three places the seeds of the *Cuscuta* came, is not determined. It grows with great luxuriance upon the stems of *Scævola Taccada*, when plunged in the tan-pit. Other plants, which were placed in situations more exposed to the sun, and which had attached themselves to neighbouring individuals of a more woody nature, did not attain to so large a size, and had their stems and branches less succulent, and more purple.

Our *Cuscuta* coincides in so many points with the *C. reflexa* of Dr ROXBURGH, that, except the presence of the warts on the calyx and pedicels, I know of no difference *. Hence, I am led to make it a variety of that plant, an opinion in which I believe Dr GRAHAM is disposed to agree.

For the principal figures of the drawing from which the engraving was made, I am indebted to Dr GREVILLE.

Fig. 1. Corolla laid open. Fig. 2. Calyx, with the advanced germen. Fig. 3. Section of a young capsule. Fig. 4. Capsule opening. Fig. 5. The same, from which the lid is removed. Fig. 6. Seed. Fig. 7. Section of the seed, shewing portions of the Embryo, the rest being imbedded and hid in the Albumen.—*All more or less magnified.*

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* I speak, however, from the description in the Flora Indica only. The figure in the "*Plants of Coromandel*," which I have not seen, Dr GRAHAM assures me has the flowers considerably smaller than in our plant.